

Exelon Generation Company, LLC
Quad Cities Nuclear Power Station
22710 206th Avenue North
Cordova, IL 61242-9740

www.exeloncorp.com

SVP-04-099

November 17, 2004

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

Quad Cities Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: Renewal of National Pollutant Discharge Elimination System (NPDES)
Permit No. IL 0005037

In accordance with Technical Specifications, Appendix B, Section 2.2, "Reporting Related to the NPDES Permits and State Certifications," enclosed is the application for renewal of the NPDES Permit for Quad Cities Nuclear Power Station.

Should you have any questions concerning this letter, please contact Mr. W. J. Beck at (309) 227-2800.

Respectfully,



Timothy J. Tulon
Site Vice President
Quad Cities Nuclear Power Station

Attachment: Renewal Application for NPDES Permit No. IL 0005037

cc: Regional Administrator – NRC Region III (w/o Attachment)
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station (w/o Attach.)

CDO1

Attachment

Renewal Application for NPDES Permit No. IL 0005037

Exelon Generation Company, LLC
Quad Cities Nuclear Power Station
22710 206th Avenue North
Cordova, IL 61242-9740

www.exeloncorp.com

SVP-04-098

November 17, 2004

Certified Mail

Mr. Blaine Kinsley
Illinois Environmental Protection Agency
DWPC Permit Section #15
1021 North Grand Avenue East
P. O. Box 19276
Springfield, Illinois 62794-9276

Subject: Quad Cities Nuclear Generating Station Application to Renew NPDES
Permit No. IL 0005037

In accordance with the requirements of Title 35 of the Illinois Administrative Code, Subtitle C, Chapter I - Pollution Control Board, Section 309.104 and the requirements of 40 CFR 122.21, Exelon Generation Company, LLC, Quad Cities Generating Station hereby submits two copies of Consolidated Permit Application Forms 1 and 2C with associated attachments for the renewal of Quad Cities NPDES Permit No. IL0005037.

As allowed by the IEPA with previous NPDES permit renewals submitted October 12, 1994 and November 8, 1999, the only Form 2C, Part V-A pollutants reported are those required by the station's existing NPDES permit. Additionally, pollutants categorized as GC/MS Fraction Compounds in Part V-C are not reported for any outfalls, as requested by Quad Cities Station in a correspondence to the IEPA on September 10, 2004. Relief from sampling for these pollutants was requested and granted by the IEPA with the previous two NPDES Permit renewals submitted October 12, 1994 and November 8, 1999.

Pollutant levels for all permit-required parameters were derived from station data reported on Discharge Monitoring Reports (DMRs) from January 2003 through December 2003. In most cases, only one analysis was conducted for all other pollutant parameters identified on Form 2C. Long-term flow averages requested on Form 2C, Item V.1 have been computed by averaging the monthly flow averages reported on the January 2003 through December 2003 DMRs for each outfall. Mass load values were calculated using long-term average flows.

Included with application Forms 1 and 2C are several Attachments as follows: Attachment 1, Requested Permit Changes. The requests are bulleted under each outfall number for clarity. Attachment 2, Area Topographic Map and Site Area Map as requested in Form 1, XI. Attachment 3, Site Water and Wastewater Flow Diagram as requested in Form 2C section IIA. Attachment 4, Listing of water treatment additives that have the potential of being discharged by way of the various outfalls with associated Material Safety Data Sheets (MSDSs). Attachment 5 is a copy of a correspondence to your office dated September 10, 2004 requesting the waiver of selected analyses.

In regards to compliance with Section 316(b) of the Clean Water Act, USEPA final rule published July 9, 2004, 69 Federal Register 41575 through 41683, Section 125.95 of the new rule requires detailed studies and other information to establish what intake structure technology or other measures will be used to comply with the rule. Ordinarily, this material is to be submitted with the facility's next application for renewal of its NPDES permit. For permits that expire less than four years after the rule was published on July 9, 2004 (that is, before July 9, 2008), the operator may have up to three and half years to submit the information under the rule, so long as it is submitted "as expeditiously as practicable" in accordance with 40 CFR 125.95(a)(2)(ii). Quad Cities Generating Station's current NPDES permit expires on May 31, 2005, well before July 9, 2008. Therefore, Quad Cities is submitting to IEPA, under separate cover, a request for a schedule to submit the required 316(b) information pursuant to 40 CFR 125.95(a)(2)(ii). Our letter will request that Exelon Generation Company, LLC, be allowed to submit the information called for by Section 125.95 as expeditiously as practicable, which, for the reasons provided, will require until January 7, 2008. A copy of this letter is included as Attachment 6.

Please contact Mark Stuhlman at (309) 227-2765 if you have any questions regarding this application.

Sincerely,



Timothy J. Tulon
Site Vice President
Quad Cities Generating Station

Forms and Attachments:

EPA Form 1

EPA Form 2C

Attachment 1: Requested Permit Changes

Attachment 2: Area Topographic Map and Site Area Map

Attachment 3: Site Water and Wastewater Flow Diagram

Attachment 4: List of Water Treatment Additives and MSDS Sheets

Attachment 5: Copy of Letter Requesting Waiver

Attachment 6: Copy of Letter Requesting 316(b) Schedule

cc: Quad Cities Regulatory Assurance
Vicki Neels
Mark Stuhlman
John Petro
Jim Bolte
Larry LaJeone
Letterbook

FORM 1 GENERAL	 EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY GENERAL INFORMATION <i>Consolidated Permits Program</i> <i>(Read the "General Instructions" before starting.)</i>	I. EPA I.D. NUMBER F I L D 0 6 0 8 6 2 8 1 0																																																						
II. POLLUTANT CHARACTERISTICS <p>INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column. If the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">SPECIFIC QUESTIONS</th> <th colspan="3">MARK "X"</th> <th rowspan="2">SPECIFIC QUESTIONS</th> <th colspan="3">MARK "X"</th> </tr> <tr> <th>YES</th> <th>NO</th> <th>FORM ATTACHED</th> <th>YES</th> <th>NO</th> <th>FORM ATTACHED</th> </tr> </thead> <tbody> <tr> <td>A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)</td> <td></td> <td>X</td> <td></td> <td>B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)</td> <td>X</td> <td></td> <td>X</td> <td>D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)</td> <td></td> <td>X</td> <td></td> <td>F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)</td> <td></td> <td>X</td> <td></td> <td>H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)</td> <td></td> <td>X</td> <td></td> <td>J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)</td> <td></td> <td>X</td> <td></td> </tr> </tbody> </table>		SPECIFIC QUESTIONS	MARK "X"			SPECIFIC QUESTIONS	MARK "X"			YES	NO	FORM ATTACHED	YES	NO	FORM ATTACHED	A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X		B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X		C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		X	D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		X		E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)		X		F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X		G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X		I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		GENERAL INSTRUCTIONS <p>If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.</p>	
SPECIFIC QUESTIONS	MARK "X"			SPECIFIC QUESTIONS	MARK "X"																																																				
	YES	NO	FORM ATTACHED		YES	NO	FORM ATTACHED																																																		
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X		B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X																																																			
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		X	D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		X																																																			
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)		X		F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X																																																			
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X																																																			
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X																																																			
PLEASE PLACE LABEL IN THIS SPACE																																																									
III. NAME OF FACILITY <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:5%;">1</td> <td style="width:5%;">SKIP</td> <td style="width:90%;">Quad Cities Generating Station</td> <td style="width:5%;"></td> </tr> </table>				1	SKIP	Quad Cities Generating Station																																																			
1	SKIP	Quad Cities Generating Station																																																							
IV. FACILITY CONTACT <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:5%;">2</td> <td style="width:60%;">Stuhlman Mark Sr Environmental</td> <td style="width:10%;">309</td> <td style="width:10%;">227</td> <td style="width:15%;">2765</td> </tr> </table>				2	Stuhlman Mark Sr Environmental	309	227	2765																																																	
2	Stuhlman Mark Sr Environmental	309	227	2765																																																					
V. FACILITY MAILING ADDRESS <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:5%;">3</td> <td style="width:95%;">22710 206th Ave North</td> </tr> <tr> <td style="width:5%;">4</td> <td style="width:50%;">Cordova</td> <td style="width:10%;">IL</td> <td style="width:35%;">61242</td> </tr> </table>				3	22710 206th Ave North	4	Cordova	IL	61242																																																
3	22710 206th Ave North																																																								
4	Cordova	IL	61242																																																						
VI. FACILITY LOCATION <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:5%;">5</td> <td style="width:95%;">22710 206th Ave North</td> </tr> <tr> <td style="width:5%;">6</td> <td style="width:50%;">Cordova</td> <td style="width:10%;">IL</td> <td style="width:35%;">61242</td> </tr> </table>				5	22710 206th Ave North	6	Cordova	IL	61242																																																
5	22710 206th Ave North																																																								
6	Cordova	IL	61242																																																						

X. EXISTING ENVIRONMENTAL PERMITS cont.

A. NPDES (*Discharges to Surface Water*)

ILR109537

Notice of Coverage Under Construction Site
Activity Storm Water General Permit

E. Other (*Specify*)

CENCR-OD-S-297290

U.S. Army Corps of Engineers Rock Island District
Maintenance Dredging Permit

2002-EA-5001

Quad Cities Dredged Material Sedimentation Ponds

EPA I.D. NUMBER (copy from Item 1 of form 1)

ILD060862810

Form Approved.

OMB No. 2000-0059 Approval
expires 12-31-85

Please print or type in the unshaded areas only.

FORM 2C NPDES	EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY	
		APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS Consolidated Permits Program	

I. OUTFALL LOCATION

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

A. OUTFALL NUMBER (list)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (name)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
001/002	41	43	30	90	18	45	Mississippi River
B01	41	43	30	90	18	45	Mississippi River
C01	41	43	30	90	18	45	Mississippi River
A02	41	43	30	90	18	45	Mississippi River

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g. for certain mining activities), provide a pictorial description of the nature and amount of any source 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 NO (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
001/002	Open Cycle Diffusers	1016.4 MGD	Discharge to Surface Water	4-A	
	Main Condenser Cooling water	972.4 MGD			
	House Service Water	44 MGD			
	Radwaste Treatment System Blowdown	.055 MGD			
	Wastewater Treatment Plant	.051 MGD			
	Sanitary Waste Treatment Plant	.004 MGD			
	House Service Water Strainer Backwash	.126 MGD			
	Intake Screen Backwash	.508 MGD			
	Units 1 and 2 Oil / Water Separators	Intermittent			
	Fish Culture Facilities	Intermittent			
	Crib House Floor Drain Sump				
B01	Wastewater Treatment Plant	.051 MGD	Oil/Water Separation,	X-X	
	Crib House Floor Drain Sump	.050 MGD	Equalization	X-X	
	Aux. Boiler Blowdown	Seasonal	Coagulation, Flocculation	2-D	1-G
	Roof and Floor Drains	Intermittent	Multimedia Filtration	1-Q	
	Portable Demineralizer Rinse Water	Intermittent	Drying Beds	5-H	

OFFICIAL USE ONLY (effluent guidelines sub-categories)

CONTINUED FROM THE FRONT

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

☒ X

YES (complete the following table)

☐ NO (go to Section III)

1. OUTFALL NUMBER (list)	2. OPERATION(s) CONTRIBUTING FLOW (list)	3. FREQUENCY		4. FLOW					c. DUR-ATION (in days)
		a. DAYS PER WEEK (specify average)	b. MONTHS PER YEAR (specify average)	a. FLOW RATE (in mgd)		b. TOTAL VOLUME (specify with units)			
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY		
A02	Radwaste Treatment System Blowdown	1	12	0.055	0.057	55,000 gal	56550 gal	1	

III. PRODUCTION

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

☒ X

YES (complete Item III-B)

☐

NO (go to Section IV)

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

☐

YES (complete Item III-C)

☒ X

NO (go to Section IV)

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

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

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or Local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐

YES (complete the following table)

☒ X

NO (go to Item IV-B)

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COM- PLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		a. RE-QUIRED	b. PRO- JECTED
N/A	N/A	N/A	N/A	N/A	N/A

B. OPTIONAL: You may wish to attach additional sheets describing any additional water pollution control programs (or other environmental projects which may affect your discharges) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED.

Please print or type in the unshaded areas only.

FORM 2C NPDES		EPA				U.S. ENVIRONMENTAL PROTECTION AGENCY APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS Consolidated Permits Program	
1. OUTFALL NO (list)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT				
	a. OPERATION (list)	b. AVERAGE FLOW (include units)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1			
C01	Sanitary Waste Treatment Plant	.004 MGD	Grinding, Equalization,	1-L	X-X		
			Sedimentation, Trickling Filter or	1-U	3-H		
			Rotating Biological Contactor,	X-X			
			Sedimentation, Disinfection,	1-U	2-F		
			Aerobic Digestion, Drying Beds	5-A	5-H		
			Landfill (radioactive burial)	5-Q			
A02	Radwaste Treatment System Blowdown	.055 MGD	Filtration or Demineralization,	1-Q	2-J		
	Laundry Wastewater, Floor Drains,		Reuse/Recycle of Treated Effluent	4-C			
	Equipment Drains, Reactor Water		On-Site Storage of Sludge	X-X			
	Filter Backwash from Reactor Cleanup and		Landfill (radioactive burial)	5-Q			
	Condensate Demineralizers,						
	Laboratory Wastewater						

OFFICIAL USE ONLY (effluent guidelines sub-categories)

CONTINUED FROM PAGE 2

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding - Complete one set of tables for each outfall - Annotate the outfall number in the space provided.

NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

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

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
N/A	N/A	N/A	N/A

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

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

YES (list all such pollutants below)

X

NO (go to Item VI-B)

N/A

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have 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 Section VIII)

N/A

VIII. CONTRACT ANALYSIS INFORMATION

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

☒ YES (list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)

☐ NO (go to Section IX)

A. NAME	B. ADDRESS	C. TELEPHONE (area code & no.)	D. POLLUTANTS ANALYZED (list)
Severn Trent Labs St. Louis	13715 Rider Trail North, Earth City, Missouri 63045	(314) 298-8566	Outfall A02: All Analyses
TestAmerica Incorporated	704 Enterprise Drive Cedar Falls, Iowa 50613-0625	(319) 277-2401	Outfall 001 / 002: All Analysis Outfall B01: All Analysis Outfall C01: All Analysis Intake: All Analysis

IX. CERTIFICATION

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

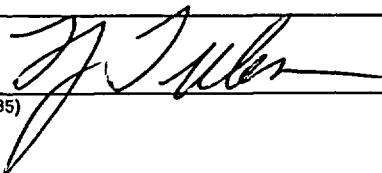
A. NAME & OFFICIAL TITLE (type or print)

Timothy J. Tulon / Site Vice President Quad Cities Generating Station

B. PHONE NO. (area code & no.)

(309) 227- 3600

C. SIGNATURE



D. DATE SIGNED

11-17-04

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

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

ILD 060862810

Form Approved

OMB No. 2000-0059

Approval expires 12-31-85

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

OUTFALL NO.
001/002

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						3. UNITS		4. INTAKE (optional)			
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)												
b. Chemical Oxygen Demand (COD)												
c. Total Organic Carbon (TOC)												
d. Total Suspended Solids (TSS)												
e. Ammonia												
f. Flow	VALUE	1436	VALUE	1422	VALUE	1016.4	365	MGD	VALUE			
g. Temperature (winter)	VALUE	34.8	VALUE	28.4	VALUE	26.9	121	°C	VALUE			
h. Temperature (summer)	VALUE	46.17	VALUE	43.2	VALUE	39.3	122	°C	VALUE			
i. pH	MINIMUM 7.5	MAXIMUM 9.1	MINIMUM 7.7	MAXIMUM 8.8			52	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 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
a. Bromide (24959-67-9)	X		< 2.5	< 21204.65					1	mg/L	lbs/day	< 2.5		1
b. Chlorine, Total Residual	X		0.02	169.637	< 0.02	< 169.637	< 0.02	< 169.637	52	mg/L	lbs/day			
c. Color	X		25						1	Pt-Co		30		1
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)	X		< 0.20	< 1696.372					1	mg/L	lbs/day	< 0.20		1
f. Nitrate-Nitrite (as N)	X		< 1.0	< 8481.858					1	mg/L	lbs/day	1.4		1

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NUMBER <i>(if available)</i>	2. MARK 'X'		3. EFFLUENT						4. UNITS		5. INTAKE <i>(optional)</i>			
	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE <i>(if available)</i>		c. LONG TERM AVRG. VALUE <i>(if available)</i>		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
g. Nitrogen, Total Organic <i>(as N)</i>	X		< 1.0	< 8481.9					1	mg/L	lbs/day	1.4		1
h. Oil and Grease	X		< 5.0	< 42409					4	mg/L	lbs/day	< 5.0		4
i. Phosphorus <i>(as P)</i> , Total (7723-14-0)	X		0.22	1866.009					1	mg/L	lbs/day	0.20		1
j. Radioactivity														
(1) Alpha, Total	X		< 1.3						1	pCi/L		1.9		1
(2) Beta, Total	X		4.0						1	pCi/L		2.8		1
(3) Radium, Total	X		1.2						1	pCi/L		1.4		1
(4) Radium 226, Total	X		0.3						1	pCi/L		0.1		1
k. Sulfate <i>(as SO₄)</i> (14808-79-8)	X		31	262937.6					1	mg/L	lbs/day	31		1
l. Sulfide <i>(as S)</i>		X	< 1.0	< 8481.858					1	mg/L	lbs/day	< 1.0		1
m. Sulfite <i>(as SO₃)</i> (14266-46-3)		X												
n. Surfactants	X		< 0.050	< 424.093					1	mg/L	lbs/day	< 0.050		1
o. Aluminum, Total (7429-90-5)	X		1.3	11026.415					1	mg/L	lbs/day	1.4		1
p. Barium, Total (7440-39-3)	X		0.059	500.430					1	mg/L	lbs/day	0.058		1
q. Boron, Total (7440-42-8)	X		< 0.10	< 848.186					1	mg/L	lbs/day	< 0.10		1
r. Cobalt, Total (7440-48-4)	X		< 0.020	< 169.637					1	mg/L	lbs/day	< 0.020		1
s. Iron, Total (7439-89-6)	X		1.5	12722.787					1	mg/L	lbs/day	1.6		1
t. Magnesium, Total (7439-95-4)	X		21	178119.02					1	mg/L	lbs/day	21		1
u. Molybdenum, Total (7439-98-7)	X		< 0.050	< 424.093					1	mg/L	lbs/day	< 0.050		1
v. Manganese, Total (7439-96-5)	X		0.18	1526.734					1	mg/L	lbs/day	0.17		1
w. Tin, Total (7440-31-5)	X		< 0.10	< 848.186					1	mg/L	lbs/day	< 0.10		1
x. Titanium, Total (7440-32-6)	X		< 0.050	< 424.093					1	mg/L	lbs/day	< 0.050		1

ILD 060862810

001/002

CONTINUED FROM PAGE 3 OF FORM 2-C

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

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT								4. UNITS		5. INTAKE (optional)		
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES	
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS		
METALS, CYANIDE, AND TOTAL PHENOLS																
1M. Antimony, Total (7440-36-0)		X		< 0.10	< 848.19					1	mg/L	lbs/day	< 0.10		1	
2M. Arsenic, Total (7440-38-2)		X		< 0.0050	< 42.41					1	mg/L	lbs/day	< 0.0050		1	
3M. Beryllium, Total (7440-41-7)		X		< 0.010	< 84.82					1	mg/L	lbs/day	< 0.010		1	
4M. Cadmium, Total (7440-43-9)		X		< 0.020	< 169.64					1	mg/L	lbs/day	< 0.020		1	
5M. Chromium, Total (7440-47-3)		X		< 0.020	< 169.64					1	mg/L	lbs/day	< 0.020		1	
6M. Copper, Total (7440-50-8)		X		< 0.020	< 169.64					1	mg/L	lbs/day	< 0.020		1	
7M. Lead, Total (7439-92-1)		X		< 0.10	< 848.19					1	mg/L	lbs/day	< 0.10		1	
8M. Mercury, Total (7439-97-6)		X		< 0.00020	< 1.696					1	mg/L	lbs/day	< 0.00020		1	
9M. Nickel, Total (7440-02-0)		X		< 0.050	< 424.09					1	mg/L	lbs/day	< 0.050		1	
10M. Selenium, Total (7782-49-2)		X		< 0.0050	< 42.41					1	mg/L	lbs/day	< 0.0050		1	
11M. Silver, Total (7440-22-4)		X		< 0.020	< 169.64					1	mg/L	lbs/day	< 0.020		1	
12M. Thallium, Total (7440-28-0)		X		< 1.0	< 8481.86					1	mg/L	lbs/day	< 1.0		1	
13M. Zinc, Total (7440-68-6)		X		< 0.020	< 169.64					1	mg/L	lbs/day	< 0.020		1	
14M. Cyanide, Total (57-12-5)		X		< 0.010	< 84.82					4	mg/L	lbs/day	< 0.010		4	
15M. Phenols, Total		X		< 0.020	< 169.64					4	mg/L	lbs/day	< 0.020		4	
DIOXIN																
2,3,7,8-Tetra- chlorodibenzo-P- Dioxin (1784-01-6)			X	DESCRIBE RESULTS												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (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. Chlorodibromo- methane (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. 1,3-Dichloro- propylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl bromide (74-83-9)			X												
21V. Methyl chloride (74-87-3)			X												

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
ILD 060862810	001/002

Form Approved.
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(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. Tetrachloroethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-dichloro- ethylene (156-60-5)			X												
27V. 1,1,1-Trichloroethane (71-55-6)			X												
28V. 1,1,2-Trichloroethane (79-00-5)			X												
29V. Trichloroethylene (79-01-6)			X												
30V. Trichlorofluoro- methane (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-Dimethylphenol (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-Trichlorophenol (88-06-2)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphthylene (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 (2chloroethox-y) methane (111-91-1)			X												
11B. Bis (2-chloroethyl) ether (111-44-4)			X												
12B. Bis (2-chloroisopropyl) ether (102-60-1)			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												

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
ILD 060862810	001/002

Form Approved.
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichlorobenzene (106-46-7)			X												
23B. 3,3'-Dichloro- benzidine (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 (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. Hexachlorocyclo- pentadiene (77-47-4)			X												
36B. Hexachloroethane (67-72-1)			X												
37B. Indeno (1,2,3-cd) 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-Nitrosodimethyl- amine (62-75-9)			X												
42B. N-Nitrosodi-N- propylamine (621-64-7)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodi- phenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Trichloro- benzene (120-82-1)			X												
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. D-BHC (319-84-6)			X												
3P. D-BHC (319-85-7)			X												
4P. D-BHC (58-89-9)			X												
5P. D-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. D-Endosulfan (115-29-7)			X												
12P. D-Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72-20-8)			X												
15P. Endrin Alde- hyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
ILD 060862810	001/002

Form Approved.
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(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												

EPA Form 3510-2C (Rev. 4-84)

PAGE V-9

EPA Form 3510-2C (Rev. 2-85)

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

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

ILD 060862810

Form Approved

OMB No. 2000-0059

Approval expires 12-31-85

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

OUTFALL NO.
B01

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

1. POLLUTANT	2. EFFLUENT						3. UNITS		4. INTAKE (optional)			
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)												
b. Chemical Oxygen Demand (COD)												
c. Total Organic Carbon (TOC)												
d. Total Suspended Solids (TSS)	8.8	3.75	5.5	2.34	2.6	1.11	52	mg/L	lbs/day			
e. Ammonia												
f. Flow	VALUE 0.084		VALUE 0.067		VALUE 0.051		52	MGD		VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE		VALUE		VALUE			°C		VALUE		
i. pH	MINIMUM	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 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
a. Bromide (24959-67-9)		X	< 2.5	< 1.064					1	mg/L	lbs/day			
b. Chlorine, Total Residual		X												
c. Color	X		10						1	PI-Co				
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)	X		< 0.20	< 0.085					1	mg/L	lbs/day			
f. Nitrate-Nitrite (as N)	X		< 1.0	< 0.426					1	mg/L	lbs/day			

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	b. BELIEVED PRE-SENT	c. BELIEVED AB-SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (as N)	X		1.4	0.596					1	mg/L	lbs/day			
h. Oil and Grease	X		< 5.0	< 2.128					12	mg/L	lbs/day			
i. Phosphorus (as P), Total (7723-14-0)	X		< 0.10	< 0.043					1	mg/L	lbs/day			
j. Radioactivity														
(1) Alpha, Total	X		< 1.1						1	pCi/L				
(2) Beta, Total	X		4.7						1	pCi/L				
(3) Radium, Total	X		1.9						1	pCi/L				
(4) Radium 226, Total	X		< 0.3						1	pCi/L				
k. Sulfate (as SO ₄) (14808-79-8)	X		32	13.6					1	mg/L	lbs/day			
l. Sulfide (as S)		X	< 1.0	< 0.426					1	mg/L	lbs/day			
m. Sulfite (as SO ₃) (14266-46-3)		X												
n. Surfactants	X		< 0.050	< 0.021					1	mg/L	lbs/day			
o. Aluminum, Total (7429-90-5)	X		0.23	0.098					1	mg/L	lbs/day			
p. Barium, Total (7440-39-3)	X		0.035	0.015					1	mg/L	lbs/day			
q. Boron, Total (7440-42-8)	X		< 0.10	< 0.043					1	mg/L	lbs/day			
r. Cobalt, Total (7440-48-4)	X		< 0.020	< 0.009					1	mg/L	lbs/day			
s. Iron, Total (7439-89-6)	X		< 0.10	< 0.043					1	mg/L	lbs/day			
t. Magnesium, Total (7439-95-4)	X		19.0	8.09					1	mg/L	lbs/day			
u. Molybdenum, Total (7439-98-7)	X		< 0.050	< 0.021					1	mg/L	lbs/day			
v. Manganese, Total (7439-96-5)	X		< 0.010	< 0.004					1	mg/L	lbs/day			
w. Tin, Total (7440-31-5)	X		< 0.10	< 0.043					1	mg/L	lbs/day			
x. Titanium, Total (7440-32-6)	X		< 0.050	< 0.021					1	mg/L	lbs/day			

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
ILD 060862810	B01

Form Approved.
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE 3 OF FORM 2-C

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

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)		X		< 0.10	< 0.043					1	mg/L	lbs/day			
2M. Arsenic, Total (7440-38-2)		X		< 0.0050	< 0.0021					1	mg/L	lbs/day			
3M. Beryllium, Total (7440-41-7)		X		< 0.010	< 0.004					1	mg/L	lbs/day			
4M. Cadmium, Total (7440-43-9)		X		< 0.020	< 0.0085					1	mg/L	lbs/day			
5M. Chromium, Total (7440-47-3)		X		< 0.020	< 0.0085					1	mg/L	lbs/day			
6M. Copper, Total (7440-50-8)		X		< 0.020	< 0.009					1	mg/L	lbs/day			
7M. Lead, Total (7439-92-1)		X		< 0.10	< 0.0426					1	mg/L	lbs/day			
8M. Mercury, Total (7439-97-6)		X		< 0.00020	< 0.00009					1	mg/L	lbs/day			
9M. Nickel, Total (7440-02-0)		X		< 0.050	< 0.021					1	mg/L	lbs/day			
10M. Selenium, Total (7782-49-2)		X		< 0.0050	< 0.0021					1	mg/L	lbs/day			
11M. Silver, Total (7440-22-4)		X		< 0.020	< 0.0085					1	mg/L	lbs/day			
12M. Thallium, Total (7440-28-0)		X		< 1.0	< 0.4256					1	mg/L	lbs/day			
13M. Zinc, Total (7440-66-6)		X		< 0.020	< 0.009					1	mg/L	lbs/day			
14M. Cyanide, Total (57-12-5)		X		< 0.010	< 0.004					4	mg/L	lbs/day			
15M. Phenols, Total		X		< 0.020	< 0.009					4	mg/L	lbs/day			
DIOXIN															
2,3,7,8-Tetra- chlorodibenzo-P- Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (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. Chlorodibromo- methane (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. 1,3-Dichloro- propylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl bromide (74-83-9)			X												
21V. Methyl chloride (74-87-3)			X												

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
ILD 060862810	B01

Form Approved.
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(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. Tetrachloroethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-dichloro- ethylene (156-60-5)			X												
27V. 1,1,1-Trichloroethane (71-55-6)			X												
28V. 1,1,2-Trichloroethane (79-00-5)			X												
29V. Trichloroethylene (79-01-6)			X												
30V. Trichlorofluoro- methane (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-Dimethylphenol (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-Trichlorophenol (88-06-2)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER <i>(if available)</i>	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE <i>(optional)</i>			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE <i>(if available)</i>		c. LONG TERM AVRG. VALUE <i>(if available)</i>		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphthylene (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 (2chloroethox-y) methane (111-91-1)			X												
11B. Bis (2-chloroethyl) ether (111-44-4)			X												
12B. Bis (2-chloroiso- propyl) ether (102-60-1)			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												

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
ILD 060862810	B01

Form Approved.
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE V-6

1. POLLUTANT AND GAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichlorobenzene (106-46-7)			X												
23B. 3,3-Dichloro- benzidine (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 (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. Hexachlorocyclo- pentadiene (77-47-4)			X												
36B. Hexachloroethane (67-72-1)			X												
37B. Indeno (1,2,3-cd) 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-Nitrosodimethyl- amine (62-75-9)			X												
42B. N-Nitrosodi-N- propylamine (621-64-7)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodi- phenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Trichloro- benzene (120-82-1)			X												
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. D-BHC (319-84-6)			X												
3P. D-BHC (319-85-7)			X												
4P. D-BHC (58-89-9)			X												
5P. D-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. D-Endosulfan (115-29-7)			X												
12P. D-Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72-20-8)			X												
15P. Endrin Alde- hyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
ILD 060862810	B01

Form Approved.
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(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												

EPA Form 3510-2C (Rev. 4-84)

PAGE V-9

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

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

ILD 060862810

Form Approved

OMB No. 2000-0059

Approval expires 12-31-85

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

OUTFALL NO.
C01

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

1. POLLUTANT	2. EFFLUENT						3. UNITS		4. INTAKE (optional)			
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)	36.0	1.20	21.2	0.71	9.4	0.31	41	mg/L	lbs/day			
b. Chemical Oxygen Demand (COD)												
c. Total Organic Carbon (TOC)												
d. Total Suspended Solids (TSS)	29.5	0.98	22.2	0.74	11.6	0.39	44	mg/L	lbs/day			
e. Ammonia												
f. Flow	VALUE 0.007		VALUE 0.005		VALUE 0.004		45	MGD		VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE		VALUE		VALUE			°C		VALUE		
i. pH	MINIMUM 6.6	MAXIMUM 7.6	MINIMUM 6.8	MAXIMUM 7.4	<div></div>		44	STANDARD UNITS		<div></div>		

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 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
a. Bromide (24959-67-9)		x	< 2.5	< 0.083					1	mg/L	lbs/day			
b. Chlorine, Total Residual	x		> 3.5	> 0.117	> 3.5	> 0.117	3.4	0.113	152	mg/L	lbs/day			
c. Color	x		75						1	Pt-Co				
d. Fecal Collform	x		< 1		< 1		< 1		45	#col/100 ml				
e. Fluoride (16984-48-8)	x		< 0.20	< 0.007					1	mg/L	lbs/day			
f. Nitrate-Nitrite (as N)	x		52	1.736					1	mg/L	lbs/day			

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
g. Nitrogen, Total Organic (as N)	X		11.9	0.397					1	mg/L	lbs/day			
h. Oil and Grease	X		< 5.1	< 0.170					4	mg/L	lbs/day			
i. Phosphorus (as P), Total (7723-14-0)	X		10.8	0.361					1	mg/L	lbs/day			
j. Radioactivity														
(1) Alpha, Total	X		< 1.9						1	pCi/L				
(2) Beta, Total	X		32.8						1	pCi/L				
(3) Radium, Total	X		3.4						1	pCi/L				
(4) Radium 226, Total	X		< 0.1						1	pCi/L				
k. Sulfate (as SO ₄) (14808-79-8)	X		57	1.9					1	mg/L	lbs/day			
l. Sulfide (as S)		X	< 1.0	< 0.033					1	mg/L	lbs/day			
m. Sulfite (as SO ₃) (14266-46-3)		X												
n. Surfactants	X		0.0972	0.003					1	mg/L	lbs/day			
o. Aluminum, Total (7429-90-5)	X		< 0.10	< 0.003					1	mg/L	lbs/day			
p. Barium, Total (7440-39-3)	X		0.020	0.001					1	mg/L	lbs/day			
q. Boron, Total (7440-42-8)	X		0.10	0.003					1	mg/L	lbs/day			
r. Cobalt, Total (7440-48-4)	X		< 0.020	< 0.001					1	mg/L	lbs/day			
s. Iron, Total (7439-89-6)	X		0.19	0.006					1	mg/L	lbs/day			
t. Magnesium, Total (7439-95-4)	X		22	0.73					1	mg/L	lbs/day			
u. Molybdenum, Total (7439-98-7)	X		< 0.050	< 0.002					1	mg/L	lbs/day			
v. Manganese, Total (7439-96-5)	X		0.031	0.001					1	mg/L	lbs/day			
w. Tin, Total (7440-31-5)	X		< 0.10	< 0.003					1	mg/L	lbs/day			
x. Titanium, Total (7440-32-6)	X		< 0.050	< 0.002					1	mg/L	lbs/day			

ILD 060862810

C01

Form Approved.

OMB No. 2000-0059 Approval

expires 12-31-85

CONTINUED FROM PAGE 3 OF FORM 2-C

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

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)		X		< 0.10	< 0.003					1	mg/L	lbs/day			
2M. Arsenic, Total (7440-38-2)		X		< 0.0050	< 0.0002					1	mg/L	lbs/day			
3M. Beryllium, Total (7440-41-7)		X		< 0.010	< 0.000					1	mg/L	lbs/day			
4M. Cadmium, Total (7440-43-9)		X		< 0.020	< 0.00067					1	mg/L	lbs/day			
5M. Chromium, Total (7440-47-3)		X		< 0.020	< 0.0007					1	mg/L	lbs/day			
6M. Copper, Total (7440-50-8)		X		< 0.020	< 0.001					1	mg/L	lbs/day			
7M. Lead, Total (7439-92-1)		X		< 0.10	< 0.0033					1	mg/L	lbs/day			
8M. Mercury, Total (7439-97-6)		X		< 0.00020	< 0.00001					1	mg/L	lbs/day			
9M. Nickel, Total (7440-02-0)		X		< 0.050	< 0.002					1	mg/L	lbs/day			
10M. Selenium, Total (7782-49-2)		X		< 0.0050	< 0.0002					1	mg/L	lbs/day			
11M. Silver, Total (7440-22-4)		X		< 0.020	< 0.0007					1	mg/L	lbs/day			
12M. Thallium, Total (7440-28-0)		X		< 1.0	< 0.0334					1	mg/L	lbs/day			
13M. Zinc, Total (7440-66-6)		X		0.133	0.004					1	mg/L	lbs/day			
14M. Cyanide, Total (57-12-5)		X		0.019	0.001					4	mg/L	lbs/day			
15M. Phenols, Total		X		< 0.020	< 0.001					4	mg/L	lbs/day			
DIOXIN															
2,3,7,8-Tetra- chlorodibenzo-P- Dioxin (1784-01-6)			X	DESCRIBE RESULTS											

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (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. Chlorodibromo- methane (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. 1,3-Dichloro- propylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl bromide (74-83-9)			X												
21V. Methyl chloride (74-87-3)			X												

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
ILD 060862810	C01

Form Approved.
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(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. Tetrachloroethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-dichloro- ethylene (156-60-5)			X												
27V. 1,1,1-Trichloroethane (71-55-6)			X												
28V. 1,1,2-Trichloroethane (79-00-5)			X												
29V. Trichloroethylene (79-01-6)			X												
30V. Trichlorofluoro- methane (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-Dimethylphenol (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-Trichlorophenol (88-06-2)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphthylene (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 (2chloroethox-y) methane (111-91-1)			X												
11B. Bis (2-chloroethyl) ether (111-44-4)			X												
12B. Bis (2-chloroisopropyl) ether (102-60-1)			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												

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
ILD 060862810	C01

Form Approved.
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						d. NO. OF ANAL- YSES	4. UNITS		5. INTAKE (optional)		
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)			a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichlorobenzene (106-46-7)			X												
23B. 3,3'-Dichloro- benzidine (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 (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. Hexachlorocyclo- pentadiene (77-47-4)			X												
36B. Hexachloroethane (57-72-1)			X												
37B. Indeno (1,2,3-cd) 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-Nitrosodimethyl- amine (62-75-9)			X												
42B. N-Nitrosodi-N- propylamine (621-64-7)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodi- phenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Trichloro- benzene (120-82-1)			X												
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. α -BHC (319-84-6)			X												
3P. β -BHC (319-85-7)			X												
4P. δ -BHC (58-89-9)			X												
5P. θ -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. α -Endosulfan (115-29-7)			X												
12P. β -Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72-20-8)			X												
15P. Endrin Alde- hyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
ILD 060862810	C01

Form Approved.
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(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												

EPA Form 3510-2C (Rev. 4-84)

PAGE V-9

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

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

ILD060862810

Form Approved

OMB No. 2000-0059

Approval expires 12-31-85

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

OUTFALL NO.
A02

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

1. POLLUTANT	2. EFFLUENT						3. UNITS		4. INTAKE (optional)			
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
	(1)	(2) MASS	(1)	(2) MASS	(1)	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
	CONCENTRATION		CONCENTRATION		CONCENTRATION							
a. Biochemical Oxygen Demand (BOD)												
b. Chemical Oxygen Demand (COD)												
c. Total Organic Carbon (TOC)												
d. Total Suspended Solids (TSS)	6.1	2.80	5.9	2.71	3.2	1.47	30	mg/L	lbs/day			
e. Ammonia												
f. Flow	VALUE 0.057		VALUE 0.056		VALUE 0.055		30	MGD		VALUE		
g. Temperature (winter)	VALUE		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE		VALUE		VALUE			°C		VALUE		
i. pH	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM	<div></div>			STANDARD UNITS		<div></div>		

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 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color	X		15						1	Pt-Co				
d. Fecal Collform		X												
e. Fluoride (16984-48-8)	X		< 0.10	< 0.046					1	mg/L	lbs/day			
f. Nitrate-Nitrite (as N)	X		0.087	0.040					1	mg/L	lbs/day			

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'		3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	b. BELIEVED PRE- SENT	c. BELIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
g. Nitrogen, Total Organic (as N)	X		< 0.10	< 0.046					1	mg/L	lbs/day			
h. Oil and Grease	X		5.0	2.295	5.0	2.294875	< 5.0	< 2.294875	14	mg/L	lbs/day			
i. Phosphorus (as P), Total (7723-14-0)		X												
j. Radioactivity														
(1) Alpha, Total	X		< 2.0						1	pCi/L				
(2) Beta, Total	X		967						1	pCi/L				
(3) Radium, Total	X		< 0.17						1	pCi/L				
(4) Radium 226, Total	X		< 0.053						1	pCi/L				
k. Sulfate (as SO ₄) (14808-79-8)	X		< 0.50	< 0.2					1	mg/L	lbs/day			
l. Sulfide (as S)		X												
m. Sulfite (as SO ₃) (14266-46-3)		X												
n. Surfactants		X												
o. Aluminum, Total (7429-90-5)	X		< 0.200	< 0.092					1	mg/L	lbs/day			
p. Barium, Total (7440-39-3)	X		< 0.200	< 0.092					1	mg/L	lbs/day			
q. Boron, Total (7440-42-8)	X		< 10	< 4.59					1	mg/L	lbs/day			
r. Cobalt, Total (7440-48-4)	X		< 0.050	< 0.023					1	mg/L	lbs/day			
s. Iron, Total (7439-89-6)	X		1.62	0.744					1	mg/L	lbs/day			
t. Magnesium, Total (7439-95-4)	X		< 5.0	< 2.29					1	mg/L	lbs/day			
u. Molybdenum, Total (7439-98-7)	X		< 0.040	< 0.018					1	mg/L	lbs/day			
v. Manganese, Total (7439-96-5)	X		0.036	0.016					1	mg/L	lbs/day			
w. Tin, Total (7440-31-5)	X		< 0.100	< 0.046					1	mg/L	lbs/day			
x. Titanium, Total (7440-32-6)	X		< 0.050	< 0.023					1	mg/L	lbs/day			

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
ILD060862810	A02

Form Approved.
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE 3 OF FORM 2-C

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

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)		X		< 0.060	< 0.028					1	mg/L	lbs/day			
2M. Arsenic, Total (7440-38-2)		X		< 0.200	< 0.0918					1	mg/L	lbs/day			
3M. Beryllium, Total (7440-41-7)		X		< 0.0050	< 0.002					1	mg/L	lbs/day			
4M. Cadmium, Total (7440-43-9)		X		< 0.0050	< 0.00229					1	mg/L	lbs/day			
5M. Chromium, Total (7440-47-3)		X		< 0.010	< 0.0046					1	mg/L	lbs/day			
6M. Copper, Total (7440-50-8)		X		< 0.025	< 0.011					1	mg/L	lbs/day			
7M. Lead, Total (7439-92-1)		X		< 0.100	< 0.0459					1	mg/L	lbs/day			
8M. Mercury, Total (7439-97-6)		X		< 0.00020	< 0.00009					1	mg/L	lbs/day			
9M. Nickel, Total (7440-02-0)		X		< 0.040	< 0.018					1	mg/L	lbs/day			
10M. Selenium, Total (7782-49-2)		X		< 0.200	< 0.0918					1	mg/L	lbs/day			
11M. Silver, Total (7440-22-4)		X		< 0.0100	< 0.0046					1	mg/L	lbs/day			
12M. Thallium, Total (7440-28-0)		X		< 0.200	< 0.0918					1	mg/L	lbs/day			
13M. Zinc, Total (7440-66-6)		X		< 0.020	< 0.009					1	mg/L	lbs/day			
14M. Cyanide, Total (57-12-5)		X		0.006	0.003					1	mg/L	lbs/day			
15M. Phenols, Total		X		0.089	0.041					1	mg/L	lbs/day			
DIOXIN															
2,3,7,8-Tetra- chlorodibenzo-P- Dioxin (1784-01-6)			X	DESCRIBE RESULTS											

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1)	(2) MASS	(1)	(2) MASS	(1)	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
				CONCENTRATION		CONCENTRATION		CONCENTRATION							
GC/MS FRACTION - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (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. Chlorodibromo- methane (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. 1,3-Dichloro- propylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl bromide (74-83-9)			X												
21V. Methyl chloride (74-87-3)			X												

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
ILD060862810	A02

Form Approved.
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (If available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (If available)		c. LONG TERM AVRG. VALUE (If available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(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. Tetrachloroethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-dichloro- ethylene (156-60-5)			X												
27V. 1,1,1-Trichloroethane (71-55-6)			X												
28V. 1,1,2-Trichloroethane (79-00-5)			X												
29V. Trichloroethylene (79-01-6)			X												
30V. Trichlorofluoro- methane (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-Dimethylphenol (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-Trichlorophenol (88-06-2)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER <i>(if available)</i>	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE <i>(optional)</i>		
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE	b. MAXIMUM 30 DAY VALUE <i>(if available)</i>	c. LONG TERM AVRG. VALUE <i>(if available)</i>	d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE	d. NO. OF ANAL- YSES			
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCEN- TRATION	(2) MASS			
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS														
1B. Acenaphthene (83-32-9)			X											
2B. Acenaphthylene (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 (2chloroethox-y) methane (111-91-1)			X											
11B. Bis (2-chloroethyl) ether (111-44-4)			X											
12B. Bis (2-chloroiso- propyl) ether (102-60-1)			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											

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
ILD060862810	A02

Form Approved.
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
22B, 1,4-Dichlorobenzene (106-46-7)			X												
23B, 3,3'-Dichloro- benzidine (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 (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, Hexachlorocyclo- pentadiene (77-47-4)			X												
36B, Hexachloroethane (67-72-1)			X												
37B, Indeno (1,2,3-cd) 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-Nitrosodimethyl- amine (62-75-9)			X												
42B, N-Nitrosodi-N- propylamine (621-64-7)			X												

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodi- phenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Trichloro- benzene (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 Alde- hyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
ILD060862810	A02

Form Approved.
OMB No. 2000-0059 Approval
expires 12-31-85

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. TEST- ING RE- QUIR- ED	b. BE- LIEVED PRE- SENT	c. BE- LIEVED AB- SENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANAL- YSES	a. CONCEN- TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		d. NO. OF ANAL- YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCEN- TRATION	(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												

EPA Form 3510-2C (Rev. 4-84)

PAGE V-9

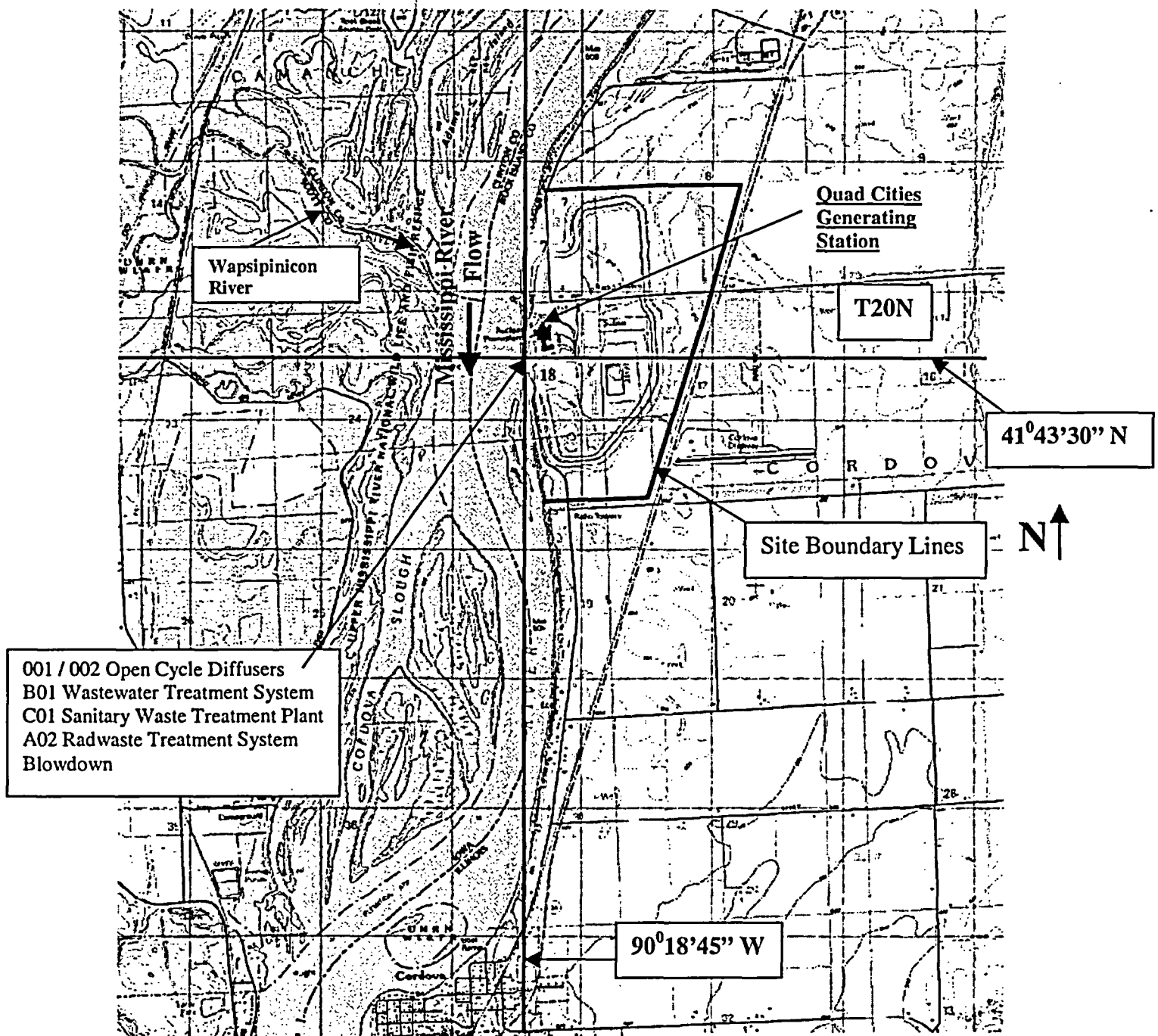
Attachment 1
Requested Permit Changes

Requested Modifications/Corrections:

In addition to the preceding information required for renewal, Exelon wishes to provide the following comments relative to proposed modifications to the existing permit. Please include these requests in your deliberations regarding Quad Cities NPDES permit renewal.

- (1) **Request that pH be eliminated as a parameter for Outfalls 001/002.** Based on the historical information that Quad Cities Station has collected over the years, pH has always been within the 6 to 9 range, with the only exception being certain instances when algal activity in the Mississippi River causes the influent pH to be above 9. As indicated on Attachment 4, Quad Cities Station does not add any wastewater additives to the subwastestreams associated with Outfalls 001/002 that would affect pH levels, and therefore we believe that there is no significant justification for continuing pH monitoring of this outfall.
- (2) **Request to have the monitoring frequency for Total Suspended Solids (TSS) and Flow reduced to 2x/month (from the current 1x/week) for Outfall B01 – Wastewater Treatment System.** Based on the excellent compliance record for the station's Wastewater Treatment System. This change would be consistent with the current sampling frequency on the station's Sanitary Waste Treatment Plant.
- (3) **Request that Oil and Grease be eliminated from the monitoring requirements for Outfall A02—Radwaste Treatment System Blowdown.** The majority of the water discharged (approximately 95%) is processed floor drain water that has been filtered to remove solids, and then sent through resin to remove most of the radioactivity (conductivity <1 umho/cm). The remainder of the water is from the laundry sample tank that consists primarily of water from washing masks and personal clothing that has become radioactively contaminated which has been filtered to remove solids. Equipment drain water is not routinely discharged. Equipment drain water that is discharged is water that has been treated the same as floor drain mentioned above, but has failed limits for storage (ie.. Total Organic Carbon > 100 ppb, Silica > 50 ppb). The Oil and Grease compliance history for this outfall over the past three years has been exemplary. Of the last 45 Oil & Grease analysis performed on this outfall, only two have been greater than the limit of detection (LOD) of 5.0 mg/L (the highest recorded value was 5.5 mg/L). Based on Quad Cities history of compliance with this parameter, we believe there is sufficient justification for this request.
- (4) We request that the Agency review Quad Cities excellent compliance record and follow through with any other appropriate monitoring parameter and/or frequency reductions as deemed appropriate.

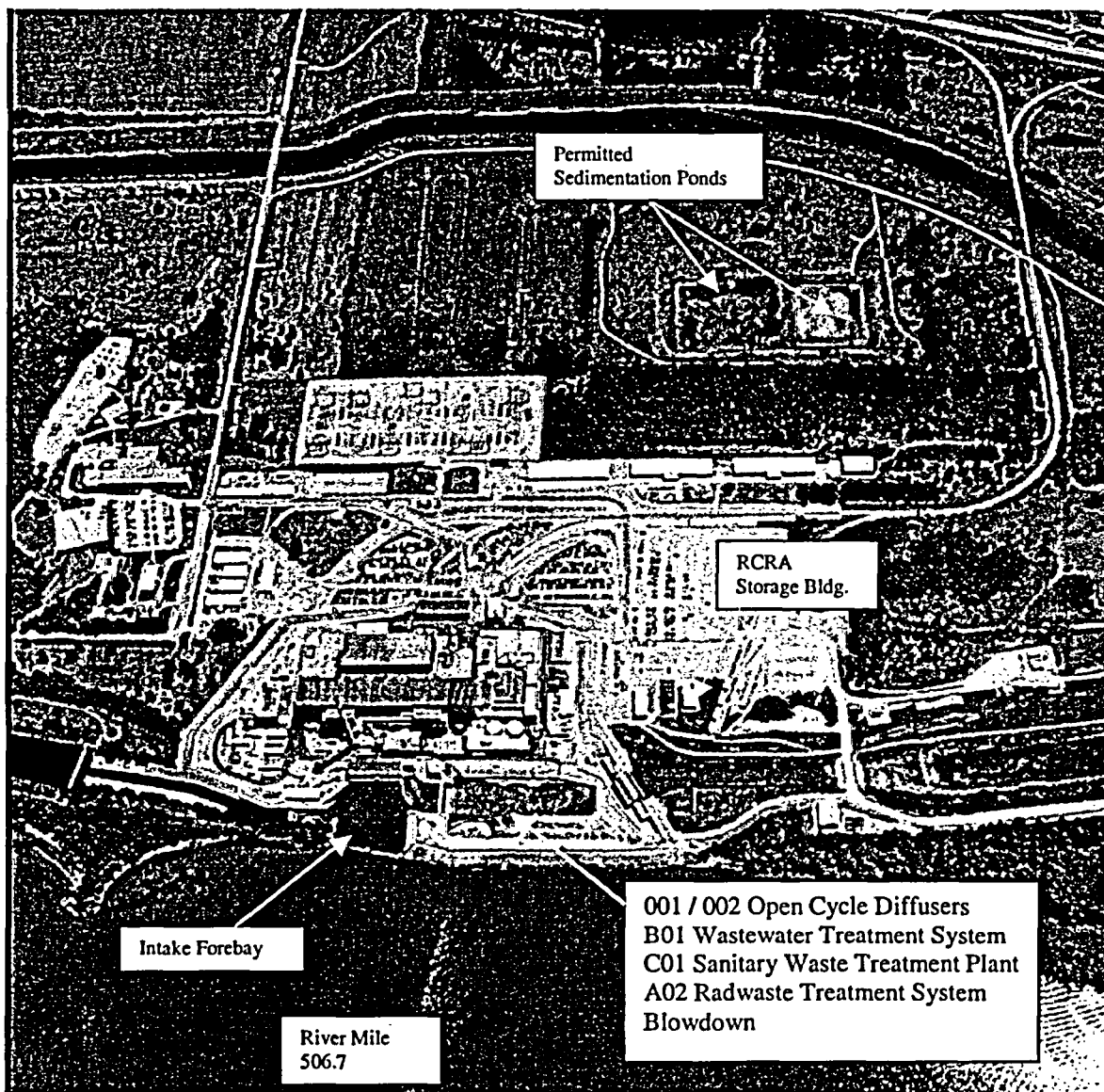
Attachment 2
Page 1 of 2



Topographic Map
USGS Map
41° 43' 30"N, 90° 18' 45"W (WGS84/NAD83)
Cordova quadrangle
Projection is UTM Zone 15 NAD83 Datum
1:24K / 25K Series
1:100,000 Scale

Location:
Exelon Generation Co, LLC
Quad Cities Generating Station
Cordova, Illinois 61242
Permit No. IL0005037

Attachment 2
Page 2 of 2

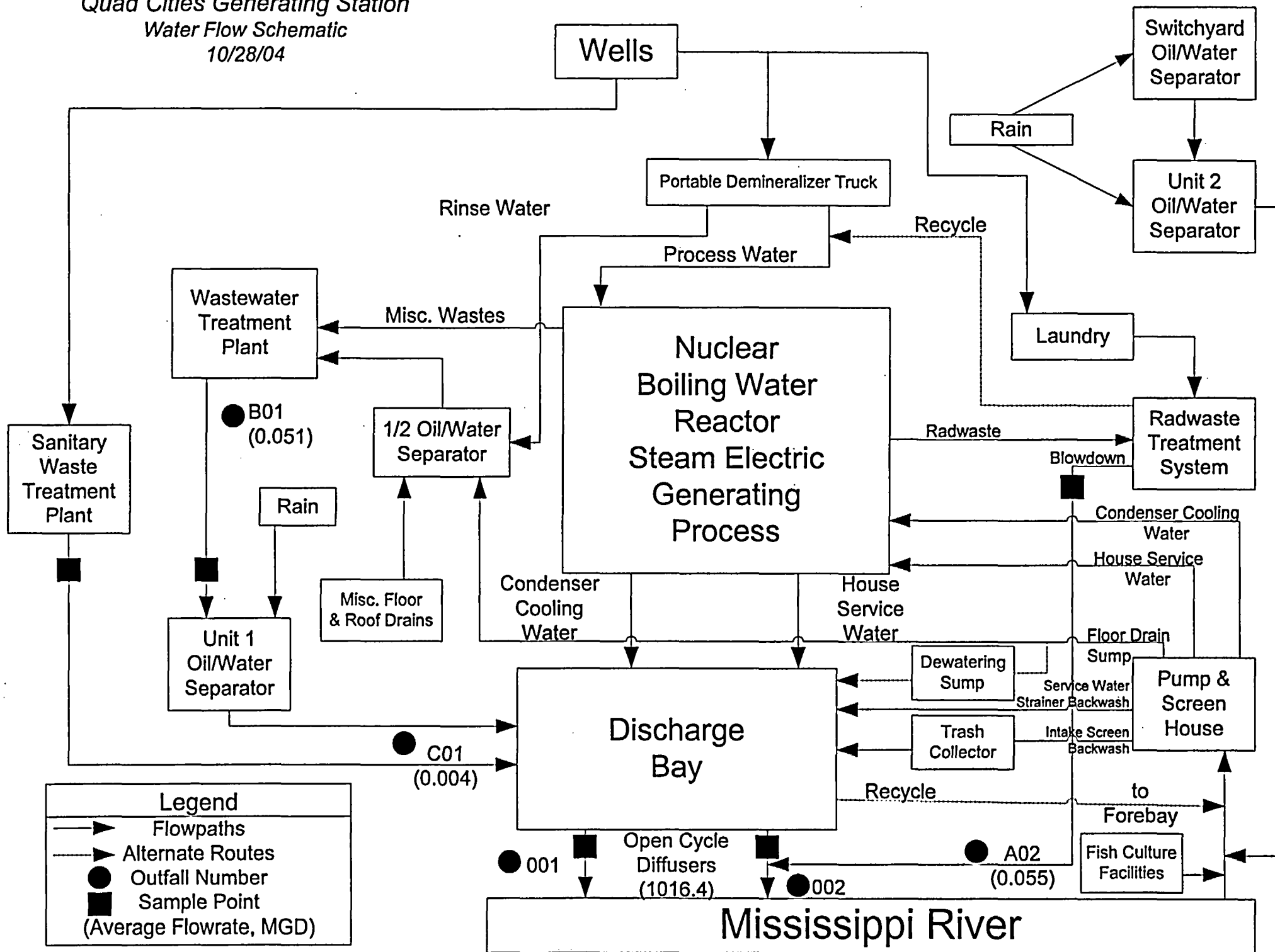


Site Area Map

Location:
Exelon Generation Co, LLC
Quad Cities Generating Station
Cordova, Illinois 61242
Permit No. IL0005037

Exelon Generation Company, LLC
 Quad Cities Generating Station
 Water Flow Schematic
 10/28/04

Attachment 3



Attachment 4
Water Treatment Additives

Quad Cities Generating Station
November 11, 2004

Raw Water Treatment Chemicals

1. Sodium Hypochlorite
2. Sodium Bromide
3. Sodium Bisulfite
4. Sodium Hexametaphosphate (SHMP)
5. Depositrol BL5400 (HEDP)
6. Depositrol BL 5323 (HEDP/PAA)
7. Nalclean 2568 (special use scale remover)

Wastewater / Sanitary Waste Treatment Chemicals

1. Aluminum Sulfate
2. Calcium Hypochlorite (Sanuril 115)
3. Sodium Bicarbonate
4. Bacterial Cultures (Bio-Systems B500-F Blue)
5. Aquafix D-Foam 9970

Outfalls 001/002—Open Cycle Diffusers

No treatment applied to this discharge as wastewater. The station's circulating water is treated with **sodium hypochlorite** and **sodium bromide** for biofouling control and **Depositrol BL5400** (a 60% HEDP liquid scale inhibitor) for scale control. The station performs sequential chlorination only, in accordance with permit Special Condition No. 4. Quad Cities continues to utilize a dechlorination system, which relies upon the addition of **sodium bisulfite** to the condenser cooling water outlet. Dechlorination is necessary in order to consistently meet the 0.05 mg/L Total Residual Oxidant (TRO) limitation, which applies whenever bromine-based biocides are used.

The station's service water is treated with **sodium hypochlorite** and **sodium bromide** for biofouling control, **Depositrol BL5323** (a blend of 14.4% HEDP and 28.8% HPS-1 copolymer. HPS-1 is a derivative of polyacrylic acid) for scale inhibition and silt dispersion, and **SHMP** (a polyphosphate corrosion inhibitor containing 35% sodium hexametaphosphate) for corrosion inhibition.

Quad Cities also has obtained prior Agency approval to use the following products for water treatment and/or biofouling control within the station's safety and non-safety-related service water systems: **Nalclean 2568** (special use scale remover for non-safety-related biocide piping), **Devoe Bar-Rust 235** and **Devoe ABC #3** (anti-fouling coatings for safety-related system). Please refer to Agency correspondence dated February 2, 1998 and March 8, 1999 (respectively) for further information regarding the use of these products.

Outfall B01—Wastewater Treatment System

Aluminum sulfate is used in the station's wastewater treatment system to assist in the settling of solids.

Outfall C01—Sanitary Waste Treatment System

Calcium hypochlorite (Sanuril 115) tablets are used for disinfection purposes in the sewage treatment system. Sodium Bicarbonate is added to various stages of treatment, as needed, to control effluent pH. Bio-Systems B500-F Blue (or similar bacterial product) is added to the aerobic digester to increase bacterial culture activity. Aquafix D-Foam 9970 (or similar defoam product) is added to the aerobic digester to control foaming.

Outfall A02—Radwaste Treatment System Blowdown

No chemical additives are routinely used in this system.

Vertex Chemical Corporation

VERTEX MATERIAL SAFETY DATA SHEET

PRODUCT NAME: SODIUM HYPOCHLORITE 6-16%

DATE: 01/21/04

MANUFACTURER'S NAME: Vertex Chemical Corporation
9909 Clayton Road, Suite 219
St. Louis, Missouri 63124
(314) 991-4005

REGULAR TELEPHONE NUMBER: Duplo, IL (618) 286-5207
Camanche, IA (563) 243-2000
Memphis, TN (901) 775-1382

DATE REVIEWED: 01/21/04

EMERGENCY TELEPHONE NUMBER: (314) 991-4005 St. Louis

1-800-424-9300 CHEMTREC CALL CHEMTREC ONLY IN THE EVENT OF
CHEMICAL EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT
INVOLVING CHEMICALS.

NATIONAL EMERGENCY RESPONSE CENTER: 1-800-424-8802

SECTION I. PRODUCT IDENTIFICATION

TRADE NAME AND SYNONYMS: Liquid Bleach, Soda Bleach, VERTEX CSS-6™ (EPA Reg. No. 9616-11), VERTEX CONCENTRATE™ (EPA Reg. No. 9616-8), VERTEX CSS-10™ (EPA Reg. No. 9616-9), VERTEX CSS-12™ (EPA Reg. No. 9616-7), VERTEX Germicidal Ultra Bleach (EPA Reg. No. 9616-13)

CHEMICAL FAMILY: Oxidizing Agent (Hypochlorite) [will readily produce a molecular alteration when in contact with certain chemicals/materials (see reactivity data.)]

CAS NO. 7681-52-9

FORMULA: NaOCI

MOLECULAR WEIGHT: 74.45

SHIPPING NAME AND HAZARDOUS CLASS-(DOT): Hypochlorite solution, 8 Corrosive Material, UN1791, PG III, RQ (Sodium Hypochlorite)

MSF: Vertex Chemical Corporation, 3101 Carondelet Road, Duplo, IL 62239; Vertex Chemical Corporation, 2825 Channel Ave, Memphis TN 38113; Vertex Chemical Corporation 2619 Camanche Industrial Park Drive, Camanche, IA 52730:: Sodium hypochlorite registered with NSF International, Maximum Use Dosages are 175 mg/L (CSS-6*), 105 mg/L (CSS-10* and VERTEX CONCENTRATE*), and 84 mg/L (CSS-12*).

SECTION II. EMERGENCY RESPONSE INFORMATION

HEALTH HAZARDS: See Page 2, Section VI

FIRE OR EXPLOSION: See Page 3, Section IX

IMMEDIATE PRECAUTIONS: WASH FROM EYES: See Page 2, Section V, First Aid;
See Page 3, Section X, Hazardous Reactivity;
See Page 4, Section XI, Spill, Leak & Disposal Procedures

SPILLS OR LEAKS: See Page 4, Section XI, Spill, Leak & Disposal Procedures

FIRST AID: See page 2, Section V

SECTION III. COMPONENTS

COMPONENT	CAS NO	%by weight	EXPOSURE LIMITS, MG/M3			
			OSHA PEL	ACGIH TLV	OTHER LIMIT	HAZARD
SODIUM HYPOCHLORITE	7681-52-9	6-16	NONE	NONE	NONE	CORROSIVE/OXIDIZER
SODIUM CHLORIDE	7647-14-5	5-13	NONE	NONE	NONE	NONE
SODIUM HYDROXIDE	1310-73-2	0.2-4.0	2MG/M3	2MG/M3	NONE	CORROSIVE
WATER	7732-18-5	BALANCE	NONE	NONE	NONE	NONE

Vertex Chemical Corporation
MATERIAL SAFETY DATA SHEET

PRODUCT NAME: SODIUM HYPOCHLORITE 6-16%

DATE: 01/21/04

SECTION IV. PHYSICAL PROPERTIES

Concentration	6% NaOCl	11% NaOCl	13% NaOCl
Molecular Weight	74.45	74.45	74.45
Specific Gravity	1.115	1.173	1.211
pH	12.31	12.95	13.05
Freeze Point, °F	20°	-1°F	-12°F
Boiling Point, °F	219°F	222°F	225°F
Viscosity @ 77°F (centistokes)	1.10	1.53	1.83
Vapor Pressure @ 50°C (KPa)	6	6.2	7.5
Vapor Pressure @ 55°C (KPa)	7.63	7.63	9.34
Vapor Density	NA	NA	NA
Evaporation Rate	NA	NA	NA
Solubility	Soluble in Water	Same as 6%	Same as 6%
Color	Clear Yellow	Same as 6%	Same as 6%
Odor	Pungent Chlorine Bleach Odor	Same as 6%	Same as 6%
Appearance	Banana-Colored Clear Liquid	Same as 6%	Same as 6%

SECTION V. FIRST AID MEASURES

If Inhaled: Remove to fresh air. Give artificial respiration if not breathing. Administer Oxygen if breathing is difficult. Get immediate medical attention.

In Case Of Eye Contact: Immediately flush eyes thoroughly and continue to repeatedly flush eyes with constantly running water for 15 minutes, lifting the upper and lower eyelids occasionally. Get immediate medical attention.

In Case Of Skin Contact: Immediately flush skin thoroughly and continue to repeatedly flush skin with constantly running water for 15 minutes. Remove contaminated clothing and shoes; wash before reuse. Get immediate medical attention.

If swallowed: Do not induce vomiting. If conscious, give water or milk, or milk of magnesia. Do not give baking soda or acid antidotes. Do not give anything by mouth to an unconscious or convulsing person. Get immediate medical attention.

SECTION VI. HEALTH HAZARD INFORMATION

Primary Routes Of Exposure: Skin or eye contact, inhalation.

Avoid eye or skin contact, inhalation.

Signs And Symptoms Of Exposure:

Inhalation: Inhalation of fumes or mists causes respiratory tract irritation and irritation of mucous membranes. If sodium hypochlorite is mixed with ammonia or other chemicals, evolution of chlorine or chlorine based compounds results. These gases can produce pulmonary edema. **Never mix with any other chemicals.**

Eye Contact: Liquid and mists may severely irritate or damage the eyes.

Skin Contact: The liquid will irritate the skin, causing redness and possibly inflammation, or chemical burns to broken skin.

Swallowed: Mists and liquid are extremely corrosive to the mouth and throat, mucous membranes and stomach. Swallowing the liquid burns the tissues, causes severe abdominal pain, nausea, vomiting, circulatory collapse, confusion, delirium, coma, and collapse. Swallowing large quantities can cause death.

Chronic Effects of Exposure: Irritation effects increase with strength of solution and time of exposure. Prolonged or repeated exposure can lead to constant irritation of eyes and throat. Prolonged or repeated contact may cause dermatitis and sensitization.

Medical Conditions Generally Aggravated By Exposure: Asthma or other pre-existing lung/respiratory illnesses.

Vertex Chemical Corporation
MATERIAL SAFETY DATA SHEET

PRODUCT NAME: SODIUM HYPOCHLORITE 6-16%

DATE: 01/21/04

SECTION VII. TOXICITY DATA

Oral: For 5% Solution Rat LD50 = 13 G/KG
For 12.5% solution rat LD50 = 5 G/KG

Dermal: Rat LD50 >3.0 G/KG
Inhalation: No Data Available

Carcinogenicity: This material is not considered to be a carcinogen by the National Toxicology Program, the International Agency for Research of Cancer, or the Occupational Safety and Health Administration.

Other Data: None

SECTION VIII. PERSONAL PROTECTION

Ventilation: Local mechanical exhaust ventilation to minimize exposure to vapors or mist at the point of use.

Respiratory Protection: Wear a NIOSH-approved respirator appropriate for the vapor or mist concentration at the point of use. Appropriate respirators may be a full face-piece or a half mask air-purifying cartridge respirator equipped for acid gases/mists, a self-contained breathing apparatus in the pressure demand mode, or a supplied-air respirator.

Eye Protection: Chemical goggles and full face-shield unless a full face-piece respirator is also worn. It is generally recognized that contact lenses should not be worn when working with chemicals because contact lenses may contribute to the severity of an eye injury. In a laboratory situation, where running water is immediately available and an eyewash nearby, for handling of sixteen (16) ounces or less of product, safety glasses are acceptable eye protection.

Protective Clothing: Long-sleeved shirt, trousers, rubber boots, rubber gloves, and rubber apron. In a laboratory situation, where running water is immediately available and an eyewash nearby, for handling of sixteen (16) ounces or less of product, rubber gloves can be omitted. Hands should be rinsed immediately until slick feeling is gone from skin if sodium hypochlorite exposure occurs.

Other Protective Measures: An eyewash and safety shower should be nearby and ready for use.

SECTION IX. FIRE AND EXPLOSION INFORMATION

Flash Point, Deg F: Not Flammable
Method Used: N/A

Flammable Limits In Air, %
Lower: N/A **Upper:** N/A

Autoignition Temperature: N/A

Flammable Limits (% by volume):

Lower Explosive level: LEL N/A

Upper Explosive Limit: UEL N/A

Extinguishing Media: This material is not combustible. Use extinguishing media appropriate for surrounding fire.

Special Fire Fighting Procedures: Fire fighters should wear self-contained breathing apparatus and full protective clothing. Use water spray to cool nearby containers and structures exposed to fire.

Unusual fire and explosion hazards: Containers of this material can explode as oxygen is liberated under high heat or fire conditions. Toxic fumes similar to chlorine gas are liberated by contact with acids, ammonia, some detergent cleaners, organic materials, oxidizing agents and some reducing agents. See Special Precautions Section for TLV of elemental chlorine. Highly exothermic reactions with organic materials and oxidizable materials may cause fires in adjacent, heat sensitive materials. Do not store where contact may result with organic or oxidizable materials, e.g., sawdust, paper waste, or others.

NFPA Rating: Hypochlorite is not rated by the National Fire Protection Association. Vertex, with the help of the Chlorine Institute, has assigned the following estimated rating based on NFPA standards:

Health - 2

Reactivity - 1

Fire - 0

Specific Hazard - Corrosive

SECTION X. HAZARDOUS REACTIVITY

Stability: Stable

Polymerization: Will Not Occur

Stability decreases with increased concentration, heat, light exposure, decrease in pH and contamination with heavy metals such as nickel, cobalt, copper and iron. DECREASE IN pH AND/OR CONTAMINATION CAN RESULT IN EVOLUTION OF CHLORINE (TOXIC) GAS.

CONDITIONS TO AVOID: EXCESSIVE HEAT, EXPOSURE TO LIGHT, REDUCED ALKALINITY, AND CONTAMINATION OF ANY KIND. REDUCED ALKALINITY OR CONTAMINATION CAN RESULT IN EVOLUTION OF CHLORINE (TOXIC) GAS.

STRONG OXIDIZING AGENT: in contact with the following incompatible, oxidizable materials, chemical reaction will occur allowing hazardous gases to evolve.

Incompatible Materials To Avoid: Ether, ammonia, acids, oxidizing agents, reducing agents, oxidizable or combustible materials such as wood, cloth or organic materials, heavy metals such as iron, copper, magnesium, aluminum, tin, manganese, zinc, chromium, nickel, and their alloys. **DO NOT MIX THIS PRODUCT WITH ANY OF THE FOREGOING OR HAZARDOUS GASES CAN RESULT.**

Hazardous Decomposition Products: HOCL, Chlorine, HCL, NACL, Sodium Chlorate, and oxygen which depend on pH, temperature and time.

Vertex Chemical Corporation
MATERIAL SAFETY DATA SHEET

PRODUCT NAME: SODIUM HYPOCHLORITE 6-16%

DATE: 01/21/04

SECTION XI. SPILL, LEAK AND DISPOSAL PROCEDURES

Action To Take For Spills Or Leaks: Wear alkali-resistant slicker suit and complete protective equipment including goggles, rubber gloves, rubber boots, and a self-contained breathing apparatus in the pressure demand mode or a supplied-air respirator. If the spill or leak is small, a full face-piece air-purifying cartridge respirator equipped with acid gases/mists filters may be satisfactory. In any event, always wear eye protection. For small spills or drips, mop or wipe up and dispose of in DOT-approved waste containers. For large spills, contain by diking with soil or other non-combustible absorbent material and dispose according to federal or local regulations. Keep non-neutralized material out of sewers, storm drains, surface waters, and soil. This product is very toxic to aquatic life.

Comply with all applicable governmental regulations on spill reporting, and handling and disposal of waste.

Disposal Methods: Dispose of contaminated product and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures.

NOTE: Empty containers can have residues, gases and mists and are subject to proper waste disposal, as above.

SECTION XII. SPECIAL PRECAUTIONS

Storage and Handling Precautions: Store in a cool, dry, well-ventilated place away from incompatible materials. Keep container tightly closed and vented when not in use.

Do not use pressure to empty container. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Store in original containers only at temperatures below 85 Degrees Fahrenheit. Do not store near acids, oxidizable materials, or organics. Do not store on wooden floors.

Repair and Maintenance Precautions: None

ATTENTION: When empty, the container may still be hazardous. Because containers, even after they have been emptied, still retain product residues (vapor, liquid or solid), all labeled hazard precautions **MUST BE OBSERVED**. If "emptied" product containers of 110 gallons or greater volume are to be shipped, DOT requires the containers be triple rinsed (or equivalent) to remove any residue and DOT placards be removed or covered with plain placards before they can be shipped as empty containers.

Other Precautions: Containers, even those that have been emptied, will retain product residue and vapors. Always obey hazard warnings and handle empty containers as if they were full. Do not mix or contaminate this product with ammonia, acids, hydro-carbons, alcohols, ethers, reducing agents, oxidizers, cleaning agents or other products which may liberate chlorine or other toxic vapors. For elemental chlorine, the OSHA PEL is .5 PPM TWA and 1 PPM STEL; the ACGIH TLV is 1 PPM TWA, with a STEL of 3 PPM. This product degrades with age. Use it within one month of receipt. It is a violation of federal law to use this product in a manner inconsistent with its labeling. EPA pesticides regulations apply, and EPA registration is required when used for disinfecting or sanitation purposes. **THIS PRODUCT IS LISTED ON THE TOXIC SUBSTANCES CONTROL ACT (TSCA) INVENTORY OF CHEMICAL SUBSTANCES.**

SECTION XIII. REGULATORY INFORMATION

TSCA Inventory Status: Listed on inventory.

SARA - 313 Listed Chemicals: No

RCRA Hazardous Waste No.: N/A

CERCLA: Yes

Reportable Quantity: 100 pounds

Vertex sodium hypochlorite is regulated under many federal and local laws, including OSHA, TSCA, RCRA, FIFRA, CERCLA and EPCRA. It is NOT on the list of Extremely Hazardous Substances, 40 CFR Part 355 Appendix A, nor on the "337 Toxic Chemicals" list, 40 CFR 372.

SECTION XIV. NOTICE

Vertex Chemical Corporation ("Vertex") expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Vertex makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Vertex's control, and, therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes, and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

END OF MSDS.



This MSDS Sheet complies with the style format specified by ANSI Z400 1-1993

SECTION 1: CHEMICAL PRODUCT - COMPANY IDENTIFICATION

TETRA Technologies, Inc.
25025 I-45 North
The Woodlands, Texas 77380

(218) 367-1983
(800) 327-7817

(800) 424-9300 -
(800) 222-1222

CHEMTREC (24 Hour Emergency Response)
POISON CONTROL

SUBSTANCE:

Sodium Bromide Solution

TRADE NAMES/SYNONYMS:

BioRid™ 40i, Liquid Sodium Bromide, NaBr

CHEMICAL FAMILY:

Inorganic Salt

MSDS CREATION DATE:

03 AUG 98

MSDS REVISION DATE:

21 FEB 03

SECTION 2: COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	RTECS NUMBER	PERCENTAGE
Sodium Bromide	7647-15-6	VZ3150000	1 - 46%
Water	7732-18-5		54 - 99%

PROBABLE CONTAMINANT: Sodium Chloride

SECTION 3: HAZARDS IDENTIFICATION

NFPA RATINGS: (SCALE 0-4):

HEALTH=1

FIRE=0

REACTIVITY=0

EMERGENCY OVERVIEW: Odorless, clear liquid. Avoid contact with eyes, skin and clothing. Keep container tightly closed. Wash thoroughly after handling. Use only with adequate ventilation.

POTENTIAL HEALTH EFFECTS:

INHALATION: May cause irritation.

SKIN, EYE CONTACT: May cause irritation.

INGESTION: May cause vomiting, digestive disorders, high blood pressure, headache, kidney damage, paralysis, and coma.

CARCINOGEN STATUS:

OSHA: No NTP: No IARC: No

SECTION 4: FIRST AID MEASURES

INHALATION: Remove from exposure area to fresh air. Get medical attention immediately.

SKIN CONTACT: Remove contaminated clothing and shoes. Wash affected area with soap and large amounts of water. Get medical attention, if needed.

EYE CONTACT: Flush eyes with large amounts of water. Get medical attention immediately.

INGESTION: If large amount is swallowed, or adverse affects occur, get medical attention.

NOTE TO PHYSICIAN: Sodium chloride, oral, intravenous, diuretics.

SECTION 5: FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARD: Negligible fire hazard.

EXTINGUISHING MEDIA: Use extinguishing agent appropriate for surrounding fire.

FIRE FIGHTING: Move container from fire area if possible. Avoid breathing vapors or dust; keep upwind.

HAZARDOUS COMBUSTION PRODUCTS: May generate bromine gas in the presence of strong oxidizing agents.

This MSDS Sheet complies with the style format specified by ANSI Z400 1-1993

SECTION 6: ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL SPILL:

Do not touch spilled material. Stop leak if you can do it without risk. For small spills, take up with sand or other absorbent material and place into containers for later reclamation or disposal. For larger spills, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry.

SOIL SPILL:

Dig holding area such as lagoon, pond or pit for containment. Dike flow of spilled material using soil or sandbags or concrete. Use cement powder or fly ash to absorb liquid mass. Neutralize spill with suitable agent.

WATER SPILL:

Add suitable agent to neutralize spilled material to pH 7. Use mechanical dredges or lifts to extract immobilized masses of pollution and precipitates.

SECTION 7: HANDLING AND STORAGE

Observe all federal, state, and local regulations when storing this liquid. Store in a tightly closed container. Store away from incompatible substances.

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS: No occupational exposure limits established by OSHA/ACGIH/NIOSH.

VENTILATION: Provide local exhaust ventilation system.

EYE PROTECTION: Wear safety glasses with splash shields or safety goggles/shield.

CLOTHING AND GLOVES: Wear appropriate chemical resistant clothing and gloves.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION:	Odorless, clear liquid.
MOLECULAR FORMULA:	NaBr in water.
MOLECULAR WEIGHT:	102.90 for pure sodium bromide.
SPECIFIC GRAVITY:	1.01 – 1.53 @ 68° F (20° C)
WATER SOLUBILITY:	Miscible with water in all proportions.
pH:	5.5 - 8.5 @ 5% solution
SOLVENT SOLUBILITY:	Slightly to moderately soluble in alcohol.

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: Stable under normal temperature and pressures.

INCOMPATIBILITIES: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION: May generate bromine gas in the presence of strong oxidizing agents.

POLYMERIZATION: Will not occur under normal temperatures and pressures.

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICITY DATA: No data are available for Sodium Bromide Solution.

The following toxicity data is for Sodium Bromide (100%):

TD_{Lo}: 3,150 mg/kg, oral, 6 weeks-continuous, rat

LD₅₀: 7,000 mg/kg, oral, mouse

LD_{Lo}: 5,020 mg/kg, subcutaneous, mouse

Reproductive effects data - See Registry of Toxic Effects of Chemical Substances (RTECS) file.

CARCINOGEN STATUS: None.

This MSDS Sheet complies with the style format specified by ANSI Z400 1-1993

SKIN CONTACT, EYE CONTACT: No data available.
INHALATION: Dusts may cause mucous membrane irritation.
INGESTION: Moderately toxic by ingestion. Acute/Chronic exposure may cause gastrointestinal, skin and nervous system irritation.

SECTION 12: ECOLOGICAL INFORMATION

No data available.

SECTION 13: DISPOSAL INFORMATION:

Observe all federal, state and local regulations when disposing of this liquid.

SECTION 14: TRANSPORT INFORMATION

DOT Shipping Name-ID Number: Non-regulated.

SECTION 15: REGULATORY INFORMATION

TSCA STATUS:	Yes
SARA SECTION 302, 304, 313:	None
SARA SECTIONS 311/312 HAZARD CLASSIFICATION	None
EINECS STATUS:	Yes
CERCLA SECTION 103:	No
CALIFORNIA PROPOSITION 65:	No

SECTION 16: OTHER INFORMATION

Individuals handling this product should be informed of the recommended safety precautions and should have access to this information.

This information relates to the specific product designated and may not be valid for such product used in combination with any other materials or in any other processes. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability, or completeness. It is the users' responsibility to satisfy themselves as to the suitability and completeness of such information for their own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

TETRA Technologies, Inc. reserves the right to refuse shipment of this product to any consumer who fails to demonstrate the ability to consistently handle and use it safely and in compliance with all applicable laws, rules and regulations. Such demonstration may require on-site inspection of any or all storage, processing, packaging and other handling systems that come in contact with it.

Customers are responsible for compliance with local, state and federal regulations that may be pertinent in the storage, application and disposal of this product.

MATERIAL SAFETY DATA SHEET
PRODUCT: SODIUM BISULFITE SOLUTION

SECTION 1 - MANUFACTURER INFORMATION

MANUFACTURER/DISTRIBUTOR:

PVS CHEMICALS, INC. (Illinois)
12260 S. Carondolet
Chicago, Illinois 60633
(773) 933-8800 (for product information)
(773) 933-0957 (fax)

FOR TRANSPORTATION EMERGENCY ONLY, DAY OR NIGHT, CALL
CHEMTREC, 1-800-424-9300

PREPARATION/REVISION DATE: 3-1-96
CONTACT: Manager of Environmental Affairs

SECTION 2 -- PRODUCT IDENTITY/HAZARDOUS INGREDIENTS INFORMATION

Product name: Sodium Bisulfite Solution
Chemical name/synonyms: Sodium Bisulfite, Aqueous Solution; Sodium
Acid Sulfite; Sodium Hydrogen Sulfite
Chemical formula: NaHSO_3
CAS number: 7631-90-5
Product Code:

HAZARDOUS INGREDIENTS: Yes

<u>Component</u>	<u>CAS No.</u>	<u>% by wt.</u>
Sodium Bisulfite	7631-90-5	27-42%

Exposure limits:

ACGIH TLV: 5 mg/m³, 8-hr TWA

Other: no information

NON-HAZARDOUS INGREDIENTS: Yes

<u>Component</u>	<u>CAS No.</u>	<u>% by wt.</u>
Water	7732-18-5	Balance

OSHA 29 CFR 1910.1200 EVALUATION: Hazardous

SECTION 3 -- PHYSICAL/CHEMICAL CHARACTERISTICS

APPEARANCE AND ODOR: Clear, pale yellow liquid with an odor of sulfur dioxide.

BOILING POINT: >100 °C

MELTING POINT: no information

VAPOR PRESSURE (REID): 78 mm Hg @ 37.7 °C

VAPOR DENSITY (AIR = 1): no information

SPECIFIC GRAVITY (WATER = 1): 1.26 to 1.37 @ 25 °C

PERCENT VOLATILE BY VOLUME (%) @ 55 °C: no information

EVAPORATION RATE (BUTYL ACETATE = 1): <1

pH: 3 to 4

SOLUBILITY IN WATER: Complete

SECTION 4 -- FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (CLOSED CUP METHOD): N/A

FLAMMABLE LIMITS IN AIR, % BY VOLUME: N/A

LOWER: N/A UPPER: N/A

EXTINGUISHING MEDIA: Use water, foam, dry chemical, or CO₂ fire extinguishers as appropriate to fight surrounding fires.

SPECIAL FIRE FIGHTING PROCEDURES: Wear protective clothing and protective equipment as appropriate for surrounding fire. Keep storage tanks or containers cool. Flood with water. Wear self contained breathing apparatus for major exposure when release of SO₂ gas is possible.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Releases sulfur dioxide gas when heated.

SECTION 5 -- REACTIVITY DATA

STABILITY: Stable

HAZARDOUS POLYMERIZATION: will not occur

INCOMPATIBILITY (CONDITIONS AND MATERIALS TO AVOID): Material is stable when properly handled. Reacts with oxidizing agents and with heat to form toxic sulfur dioxide (SO₂) gas. Avoid sources of heat.

HAZARDOUS DECOMPOSITION PRODUCTS: Decomposes with heat or oxidizing agents to release toxic SO₂ gas.

SECTION 6 -- HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: Inhalation, ingestion, direct contact

HEALTH EFFECTS (ACUTE AND CHRONIC):

INHALATION: Inhalation will irritate and may damage upper respiratory tract and lungs.

INGESTION: May irritate gastrointestinal tract. Concentrated solutions may cause burns to the digestive tract.

DIRECT CONTACT: Contact with liquid, mist, or vapor can cause immediate irritation or mild corrosive burns to all human tissue.

EYE CONTACT: Contact with eyes may result in permanent damage.

CARCINOGENS (NTP, IARC, OR OSHA): No

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

SECTION 7 -- FIRST AID

INHALATION: Remove victim to fresh air. If not breathing, perform artificial respiration and get medical attention.

INGESTION: Drink copious quantities of water or milk. Do not induce vomiting. Get immediate medical attention.

DIRECT CONTACT: Wipe off excess. Flush immediately with water for at least 15 minutes while removing contaminated clothing. Get immediate medical attention. Wash clothing before re-use. Destroy contaminated shoes.

DIRECT EYE CONTACT: Flush immediately with water for at least 15 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye/lid tissue. Get immediate medical attention.

SECTION 8 -- PRECAUTIONS FOR SAFE STORAGE, HANDLING AND USE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep storage tanks and containers out of the sun and away from sources of heat and ignition to prevent decomposition and release of SO₂ gas. Containers should be kept tightly closed to prevent oxidation of the product. In cold weather, store product at temperatures above 50 °F to avoid crystallization. Do not strike containers or fittings with tools or hard objects. Emptied container retains vapor and product residue.

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Contain spill in order to prevent contamination of sewage system or waterway. If possible, neutralize on a dry basis with sodium carbonate or sodium bicarbonate; then flush with water in accordance with applicable regulations.

WASTE DISPOSAL METHODS: Dispose of spilled, neutralized, or waste product, contaminated soil and other contaminated materials in licensed landfill or treatment facility in accordance with all

local, state and federal regulations.

SECTION 9 -- EXPOSURE CONTROL INFORMATION

VENTILATION: Provide ventilation to control exposure levels below airborne exposure limits. Use local exhaust ventilation. Reference NFPA Standard 91 for design of exhaust systems.

RESPIRATORY PROTECTION: Use NIOSH/MSHA approved, full-face respirator with canister approved for sulfuric acid/sulfur trioxide vapor and mist. Consult respirator manufacturer to determine appropriate equipment. If concentrations are high or unknown, use self-contained breathing apparatus.

PROTECTIVE GLOVES: Wear impervious rubber gloves.

EYE PROTECTION: Wear splash proof chemical safety goggles. Eyewash fountains recommended in all storage and handling areas. Do not wear contact lenses.

OTHER PROTECTIVE EQUIPMENT: Wear protective clothing to prevent skin contact. Full face shield and rubber footwear should be used. Acid resistant hood and full body suit recommended. Safety shower recommended in all storage and handling areas.

WORK/HYGIENIC PRACTICES: Avoid breathing mist. Use gloves when handling.

OTHER PRECAUTIONS: None

SECTION 10 -- REGULATORY INFORMATION

DOT:

Proper shipping name: Bisulfites, inorganic, aqueous solutions,
N.O.S. (Sodium Bisulfite, solution)

Hazard Class: 8

UN Number: UN 2693

Packing Group: III

SARA TITLE III HAZARD CLASSIFICATIONS:

ACUTE: No

CHRONIC: No

FIRE: No

REACTIVITY: No

PRESSURE: No

OTHER RATINGS:

(hazard index key: 4=severe, 3=serious, 2=moderate, 1=slight,
0=minimal)

HMIS: Health=1, Flammability=0, Reactivity=1, CORROSIVE (COR)

NFPA: Health=1, Flammability=0, Reactivity=1

OTHER INFORMATION:

CERCLA RQ: 5000 lbs.

WHMIS: 1%

TOXICITY:

Corrosive.

96 hr LC₅₀ (mosquito/fish): 240 ppm



Material Safety Data Sheet

SODIUM POLYPHOSPHATE GLASSY SOLUTION

Date Prepared: 2/17/00

Supersedes Date: 2/27/96

1. PRODUCT AND COMPANY DESCRIPTION

RHODIA INC.
RHODIA SPECIALTY PHOSPHATES
CN 7500
259 Prospect Plains Road
Cranbury NJ 08512-7500

Emergency Phone Numbers:

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC
(800-424-9300 within the United States or 703-527-3887 for international collect calls) or Rhodia CAERS
(Communication and Emergency Response System) at 800-916-3232.

For Product Information:

(800) 243-5052

Chemical Name or Synonym:

SODIUM POLYPHOSPHATE SOLUTION

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Reg Number	OSHA Hazard	Percentage
SODIUM POLYPHOSPHATES	68915-31-1	N	30 - 50
ALTERNATE CAS # (SODIUM HEXAMETAPHOSPHATE)	10124-56-8	N	
WATER	7732-18-5	N	50 - 70

3. HAZARDS IDENTIFICATION**A. EMERGENCY OVERVIEW:****Physical Appearance and Odor:**

colorless / liquid, odorless.

Warning Statements:

Based on currently available data, this product does not meet the regulatory definition of a hazardous substance. However, good industrial hygiene practices should be used in handling it.

B. POTENTIAL HEALTH EFFECTS:**Acute Eye:**

May cause irritation.

Acute Skin:

May cause slight transient irritation, on prolonged contact.

Acute Inhalation:

Low acute inhalation toxicity.

Acute Ingestion:

Ingestion of large quantities may cause nausea, vomiting, diarrhea, abdominal cramps, decreased blood pressure, decreased heart rate, coma.

Chronic Effects:

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

4. FIRST AID MEASURES**FIRST AID MEASURES FOR ACCIDENTAL:****Eye Exposure:**

Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek medical attention if irritation develops or persists or if visual changes occur.

Skin Exposure:

In case of contact, immediately wash with plenty of soap and water for at least 5 minutes. Seek medical attention if irritation develops or persists. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before re-use.

Inhalation:

If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if respiratory irritation or distress continues.

Ingestion:

If victim is conscious and alert, give 2-3 glasses of water to drink and induce vomiting by touching back of throat with a finger. Do not induce vomiting or give anything by mouth to an unconscious person. Seek immediate medical attention. Do not leave victim unattended. Vomiting may occur spontaneously. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:

Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

NOTES TO PHYSICIAN:

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Ingestion of large quantities of phosphate salts (over 1.0 grams for an adult) may cause an osmotic catharsis resulting in diarrhea and probable abdominal cramps. Larger doses such as 4-8 grams will almost certainly cause these effects in everyone. In healthy individuals most of the ingested salt will be excreted in the feces with the

diarrhea and, thus, not cause any systemic toxicity. Doses greater than 10 grams hypothetically may cause systemic toxicity. Treatment should take into consideration both anionic and cation portion of the molecule. The following treatments should be considered for the specific group(s) of phosphate salts found in this product:

--All phosphate salts, except calcium salts, have a hypothetical risk of hypocalcemia, so calcium levels should be monitored.

--Ammonium salts have a hypothetical risk of ammonia toxicity. In addition to calcium levels, ammonia and phosphate levels should be monitored.

--Potassium salts have a hypothetical risk of hyperkalemia which can cause cardiac arrhythmia. In addition to calcium levels, potassium and phosphate levels should be monitored. Also consider continuous EKG monitoring to detect hyperkalemia.

--Sodium salts have a hypothetical risk of hypernatremia. In addition to calcium levels, sodium and phosphate levels should be monitored.

5. FIRE FIGHTING MEASURES

FIRE HAZARD DATA:

Flash Point:
Not Applicable

Extinguishing Media:
Not combustible. Use extinguishing method suitable for surrounding fire.

Special Fire Fighting Procedures:
Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

Unusual Fire and Explosion Hazards:
Not combustible.

Hazardous Decomposition Materials (Under Fire Conditions):
oxides of phosphorus
oxides of sodium

6. ACCIDENTAL RELEASE MEASURES

Evacuation Procedures and Safety:
Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Containment of Spill:
Dike spill using absorbent or impervious materials such as earth, sand or clay. Follow procedure described below under Cleanup and Disposal of Spill.

Cleanup and Disposal of Spill:
Absorb with an inert absorbent. Sweep up and place in an appropriate closed container (see Section 7: Handling and Storage). DO NOT RETURN MATERIAL TO ITS ORIGINAL CONTAINER.

Environmental and Regulatory Reporting:

Prevent material from entering public sewer system or any waterways.

7. HANDLING AND STORAGE

Minimum/Maximum Storage Temperatures:
Not Available

Handling:
Keep containers closed when not being used.

Storage:
Store in an area that is cool, dry.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Introductory Remarks:

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

Exposure Guidelines:

No exposure limits were found for this product or any of its ingredients.

Engineering Controls:

Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: local exhaust ventilation at the point of generation.

Respiratory Protection:

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Eye/Face Protection:

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

It is generally regarded as good practice to wear a minimum of safety glasses with side shields when working in industrial environments.

Skin Protection:

Skin contact should be minimized through use of gloves and suitable long-sleeved clothing (i.e., shirts and pants). Consideration must be given both to durability as well as permeation resistance.

Work Practice Controls:

Personal hygiene is an important work practice exposure control measure and the following general measures

should be taken when working with or handling this material:

- (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- (3) Wash exposed skin promptly to remove accidental splashes of contact with this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

Physical Appearance:
colorless / liquid.

Odor:
odorless.

pH:
5.5 to 8 at 1 wt/wt%.

Specific Gravity:
1.5 at 20 C (68 F).

Water Solubility:
miscible

Melting Point Range:
Not Available

Boiling Point Range:
Not Available

Vapor Pressure:
Not Available

Vapor Density:
Not Available

10. STABILITY AND REACTIVITY

Chemical Stability:
This material is stable under normal handling and storage conditions described in Section 7.

Conditions To Be Avoided:
none known

Materials/Chemicals To Be Avoided:
none known

The Following Hazardous Decomposition Products Might Be Expected:

Decomposition Type: thermal
oxides of phosphorus
oxides of sodium

Hazardous Polymerization Will Not Occur.

Avoid The Following To Inhibit Hazardous Polymerization:
not applicable

11. TOXICOLOGICAL INFORMATION

Acute Eye Irritation:**Toxicological Information and Interpretation:**

eye - eye irritation, rabbit. Mildly irritating. Unwashed.

eye - eye irritation, rabbit. Non-irritating. Washed. Data for sodium polyphosphates.

Acute Skin Irritation:

No test data found for product.

Acute Dermal Toxicity:

No test data found for product.

Acute Respiratory Irritation:

No test data found for product.

Acute Inhalation Toxicity:

No test data found for product.

Acute Oral Toxicity:**Toxicological Information and Interpretation:**

LD50 - lethal dose 50% of test species, 3053 mg/kg, rat. Data for sodium polyphosphates.

Chronic Toxicity:

This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

No data found for product.

Chemical Fate Information:

No data found for product.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

EPA Hazardous Waste - NO

14. TRANSPORTATION INFORMATION

Transportation Status: IMPORTANT! Statements below provide additional data on listed DOT classification.

The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

US Department of Transportation

Shipping Name:

NOT REGULATED

15. REGULATORY INFORMATION

Inventory Status

Inventory	Status
UNITED STATES (TSCA)	Y
CANADA (DSL)	Y
EUROPE (EINECS/ELINCS)	Y
AUSTRALIA (AICS)	Y
JAPAN (MITI)	Y
SOUTH KOREA (KECL)	Y

Y = All ingredients are on the inventory.

E = All ingredients are on the inventory or exempt from listing.

P = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

FEDERAL REGULATIONS**Inventory Issues:**

All functional components of this product are listed on the TSCA Inventory.

SARA Title III Hazard Classes:

Fire Hazard	- NO
Reactive Hazard	- NO
Release of Pressure	- NO
Acute Health Hazard	- NO
Chronic Health Hazard	- NO

SARA Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

Ingredient	CERCLA/SARA RQ	SARA EHS TPQ
ALTERNATE CAS # (SODIUM HEXAMETAPHOSPHATE) 5	000 lbs	

OTHER FEDERAL REGULATIONS:**FDA Status:**

This product meets the compositional requirements of:
21 CFR 182.6760 SODIUM HEXAMETAPHOSPHATE

STATE REGULATIONS:

This product does not contain any components that are regulated under California Proposition 65.

16. OTHER INFORMATION

National Fire Protection Association Hazard Ratings--NFPA(R):

0	Health Hazard Rating--Minimal
0	Flammability Rating--Minimal
0	Instability Rating--Minimal

National Paint & Coating Hazardous Materials Identification System--HMIS(R):

0	Health Hazard Rating--Minimal
0	Flammability Rating--Minimal
0	Reactivity Rating--Minimal

Reason for Revisions:

Regulatory Review and Update.

Key Legend Information:

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
TLV - Threshold Limit Value
PEL - Permissible Exposure Limit
TWA - Time Weighted Average
STEL - Short Term Exposure Limit
NTP - National Toxicology Program
IARC - International Agency for Research on Cancer
ND - Not determined
RPI - Rhone-Poulenc Established Exposure Limits

Disclaimer:

The information herein is given in good faith but no warranty, expressed or implied, is made.



GE Betz

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
Business telephone: (215) 355-3300

Material Safety Data Sheet

Issue Date: 09-JUL-2002

EMERGENCY TELEPHONE (Health/Accident): (800) 877-1940

1 PRODUCT IDENTIFICATION

PRODUCT NAME:

DEPOSITROL BL5400

PRODUCT APPLICATION AREA:

WATER-BASED DEPOSIT CONTROL AGENT.

2 COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

CAS#	CHEMICAL NAME
2809-21-4	PHOSPHONIC ACID, (1-HYDROXYETHYLIDINE) BIS- (HEDP) Corrosive (eyes)
10294-56-1	PHOSPHOROUS ACID (PHOSPHONIC ACID) Corrosive

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER

May cause moderate irritation to the skin. Corrosive to the eyes.
Inhalation of vapor or mist may cause severe nose, throat, and
respiratory tract irritation.

DOT hazard: Corrosive to steel

Emergency Response Guide #153

Odor: Mild; Appearance: Colorless To Yellow, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:

Primary route of exposure; May cause moderate irritation to the skin.

ACUTE EYE EFFECTS:

Corrosive to the eyes.

ACUTE RESPIRATORY EFFECTS:

Inhalation of vapor or mist may cause severe nose, throat, and respiratory tract irritation.

INGESTION EFFECTS:

May cause severe irritation or burning of the gastrointestinal tract.

TARGET ORGANS:

No evidence of potential chronic effects.

MEDICAL CONDITIONS AGGRAVATED:

Not known.

SYMPTOMS OF EXPOSURE:

May cause redness or itching of skin, irritation, and/or tearing of eyes (direct contact).

4 FIRST AID MEASURES

SKIN CONTACT:

Wash thoroughly with soap and water. Remove contaminated clothing. Thoroughly wash clothing before reuse. Get medical attention if irritation develops or persists.

EYE CONTACT:

URGENT! Immediately flush eyes with plenty of low-pressure water for at least 20 minutes while removing contact lenses. Hold eyelids apart. Get immediate medical attention.

INHALATION:

If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

INGESTION:

Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

NOTES TO PHYSICIANS:

Material is corrosive. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.

5 FIRE FIGHTING MEASURES

FIRE FIGHTING INSTRUCTIONS:

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:

dry chemical, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

FLASH POINT:

> 200F > 93C SETA(CC)

MISCELLANEOUS:

Corrosive to steel

UN3265; Emergency Response Guide #153

6 ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container.

Flush area with water. Wet area may be slippery. Spread sand/grit.

DISPOSAL INSTRUCTIONS:

Water contaminated with this product may be sent to a sanitary sewer treatment facility, in accordance with any local agreement, a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7 HANDLING & STORAGE

HANDLING:

Acidic. Corrosive(Eyes). Do not mix with alkaline material.

STORAGE:

Keep containers closed when not in use. Do not freeze. If frozen, thaw and mix completely prior to use.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS**CHEMICAL NAME**

PHOSPHONIC ACID, (1-HYDROXYETHYLIDINE) BIS- (HEDP)

PEL (OSHA): NOT DETERMINED

TLV (ACGIH): NOT DETERMINED

PHOSPHOROUS ACID (PHOSPHONIC ACID)

PEL (OSHA): NOT DETERMINED

TLV (ACGIH): NOT DETERMINED

ENGINEERING CONTROLS:

adequate ventilation

PERSONAL PROTECTIVE EQUIPMENT:

Use protective equipment in accordance with 29CFR 1910 Subpart I

RESPIRATORY PROTECTION:

A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.

If air-purifying respirator use is appropriate, use a respirator with dust/mist filters.

SKIN PROTECTION:

PVC gloves-- Wash off after each use. Replace as necessary.
EYE PROTECTION:
splash proof chemical goggles

9 PHYSICAL & CHEMICAL PROPERTIES

Specific Grav. (70F, 21C)	1.453	Vapor Pressure (mmHG)	~ 18.0
Freeze Point (F)	< -30	Vapor Density (air=1)	< 1.00
Freeze Point (C)	< -34		
Viscosity (cps 70F, 21C)	85	% Solubility (water)	100.0

Odor	Mild
Appearance	Colorless To Yellow
Physical State	Liquid
Flash Point	SETA(CC) > 200F > 93C
pH As Is (approx.)	< 1.0
Evaporation Rate (Ether=1)	< 1.00

NA = not applicable ND = not determined

10 STABILITY & REACTIVITY

STABILITY:

Stable under normal storage conditions.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

May react with strong oxidizers.

DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

INTERNAL PUMPOUT/CLEANOUT CATEGORIES:

"B"

11 TOXICOLOGICAL INFORMATION

Oral LD50 RAT: 2,000 mg/kg
NOTE - RAT LD50: 2,400 mg/kg per alternate source
Dermal LD50 RABBIT: >7,940 mg/kg
NOTE - RABBIT LD50: 10,000 MG/KG ALTERNATE SOURCE
Skin Irritation Score RABBIT: 0
Eye Irritation Score RABBIT: CORROSIVE
90 Day Feed Study RAT: NOEL:10,000 ppm
NOTE - Hemopoietic effects at 30,000 ppm
90 Day Feed Study DOG: .062-1%
NOTE - 2 year-feed study. Reversible anemia developed at 1% in diet.
90 Day Feed Study DOG: 20-60 mg/kg
NOTE - 30-day study. No pathological effects.
Ames Assay BACTERIA: NEGATIVE
NOTE - +/- metabolic activation
Non-Ames Mutagenicity : NEGATIVE
NOTE - Mouse Lymphoma Assay +/- metabolic activation

12 ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY

Bluegill Sunfish 96 Hour Static Acute Bioassay
LC50= 1440; No Effect Level= 880 mg/L
Ceriodaphnia 48 Hour Static Renewal Bioassay (pH adjusted)
No Effect Level= 31.3; LC50= 113 mg/L
Daphnia magna 48 Hour Static Renewal Bioassay (pH adjusted)
LC50= 755; No Effect Level= 420 mg/L
Fathead Minnow 96 Hour Static Renewal Bioassay (pH adjusted)
LC50= 3040; No Effect Level= 1370 mg/L
Grass Shrimp (Palaemonetes pugio) 96 Hour Static Acute Bioassay
LC50= 2675 mg/L
Midge larvae (Chironomus tentans) 48 Hour Static Acute Bioassay
LC50= 14850 mg/L
Mysid Shrimp 48 Hour Static Renewal Bioassay (pH adjusted)
LC50= 319 mg/L
Rainbow Trout 96 Hour Static Acute Bioassay
LC50= 610; No Effect Level= 250 mg/L
Sheepshead Minnow 96 Hour Static Acute Bioassay
LC50= 3630; No Effect Level= 170 mg/L

BIODEGRADATION

BOD-28 (mg/g): 1
BOD-5 (mg/g): 1
COD (mg/g): 300
TOC (mg/g): 70

13 DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
D002=Corrosive(pH, steel).

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14 TRANSPORT INFORMATION

DOT HAZARD: Corrosive to steel
UN / NA NUMBER: UN3265
DOT EMERGENCY RESPONSE GUIDE #: 153

15 REGULATORY INFORMATION

TSCA:

All components of this product are listed in the TSCA inventory.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

No regulated constituent present at OSHA thresholds

SARA SECTION 312 HAZARD CLASS:

Immediate(acute)

SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION

CALIFORNIA SAFE DRINKING WATER AND TOXIC
ENFORCEMENT ACT (PROPOSITION 65) CHEMICALS PRESENT:

No regulated constituent present at OSHA thresholds
MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 OTHER INFORMATION

NFPA/HMIS

Health	3	Serious Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	CORR	DOT corrosive
(1) Protective Equipment	B	Goggles, Gloves

CODE TRANSLATION

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
	-----	-----	-----
MSDS status:	28-JAN-1997		** NEW **
	23-JUN-1997		28-JAN-1997
	03-MAY-2000	12	23-JUN-1997
	27-SEP-2000	4, 11	03-MAY-2000
	30-MAY-2001	2, 8, 11	27-SEP-2000
	31-MAY-2001	15	30-MAY-2001
	02-AUG-2001	12	31-MAY-2001
	23-AUG-2001	4, 12	02-AUG-2001
	09-JUL-2002	12	23-AUG-2001



GE Betz

GE Betz, Inc.
4636 Somerton Road
Trevose, PA 19053
Business telephone: (215) 355-3300

Material Safety Data Sheet

Issue Date: 03-JAN-2002

EMERGENCY TELEPHONE (Health/Accident): (800) 877-1940

1 PRODUCT IDENTIFICATION

PRODUCT NAME:

DEPOSITROL BL5323

PRODUCT APPLICATION AREA:

WATER-BASED CORROSION INHIBITOR/DEPOSIT CONTROL AGENT.

2 COMPOSITION / INFORMATION ON INGREDIENTS

Information for specific product ingredients as required by the U.S. OSHA HAZARD COMMUNICATION STANDARD is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

HAZARDOUS INGREDIENTS:

CAS#

CHEMICAL NAME

2809-21-4

PHOSPHONIC ACID, (1-HYDROXYETHYLIDINE) BIS- (HEDP)
Corrosive (eyes)

No component is considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer, or the Occupational Safety and Health Administration at OSHA thresholds for carcinogens.

3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION

May cause slight irritation to the skin. May cause moderate irritation to the eyes. Mists/aerosols may cause irritation to upper respiratory tract.

DOT hazard is not applicable
Emergency Response Guide is not applicable
Odor: Slight; Appearance: Yellow, Liquid

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type). Proper fire-extinguishing media: dry chemical, carbon dioxide, foam or water

POTENTIAL HEALTH EFFECTS

ACUTE SKIN EFFECTS:

Primary route of exposure; May cause slight irritation to the skin.

ACUTE EYE EFFECTS:

May cause moderate irritation to the eyes.

ACUTE RESPIRATORY EFFECTS:

Mists/aerosols may cause irritation to upper respiratory tract.

INGESTION EFFECTS:

May cause slight gastrointestinal irritation.

TARGET ORGANS:

No evidence of potential chronic effects.

MEDICAL CONDITIONS AGGRAVATED:

Not known.

SYMPTOMS OF EXPOSURE:

May cause redness or itching of skin.

4 FIRST AID MEASURES

SKIN CONTACT:

Wash thoroughly with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

EYE CONTACT:

Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get immediate medical attention.

INHALATION:

If nasal, throat or lung irritation develops - remove to fresh air and get medical attention.

INGESTION:

Do not feed anything by mouth to an unconscious or convulsive victim. Do not induce vomiting. Immediately contact physician. Dilute contents of stomach using 3-4 glasses milk or water.

NOTES TO PHYSICIANS:

No special instructions

5 FIRE FIGHTING MEASURES

FIRE FIGHTING INSTRUCTIONS:

Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

EXTINGUISHING MEDIA:

dry chemical, carbon dioxide, foam or water

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

FLASH POINT:

> 200F > 93C P-M(CC)

6 ACCIDENTAL RELEASE MEASURES

PROTECTION AND SPILL CONTAINMENT:

Ventilate area. Use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. Flush area with water. Wet area may be slippery. Spread sand/grit.

DISPOSAL INSTRUCTIONS:

Water contaminated with this product may be sent to a sanitary sewer treatment facility, in accordance with any local agreement, a permitted waste treatment facility or discharged under a permit. Product as is - Incinerate or land dispose in an approved landfill.

7 HANDLING & STORAGE

HANDLING:

Acidic. Do not mix with alkaline material.

STORAGE:

Keep containers closed when not in use. Do not freeze. If frozen, thaw and mix completely prior to use.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS**CHEMICAL NAME**

PHOSPHONIC ACID, (1-HYDROXYETHYLIDINE) BIS- (HEDP)

PEL (OSHA): NOT DETERMINED

TLV (ACGIH): NOT DETERMINED

ENGINEERING CONTROLS:

adequate ventilation

PERSONAL PROTECTIVE EQUIPMENT:

Use protective equipment in accordance with 29CFR 1910 Subpart I

RESPIRATORY PROTECTION:

A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA'S 29 CFR 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

USE AIR PURIFYING RESPIRATORS WITHIN USE LIMITATIONS ASSOCIATED WITH THE EQUIPMENT OR ELSE USE SUPPLIED AIR-RESPIRATORS.

If air-purifying respirator use is appropriate, use a respirator with dust/mist filters.

SKIN PROTECTION:

neoprene gloves-- Wash off after each use. Replace as necessary.

EYE PROTECTION:

splash proof chemical goggles

9 PHYSICAL & CHEMICAL PROPERTIES

Specific Grav. (70F, 21C)	1.256	Vapor Pressure (mmHG)	- 18.0
Freeze Point (F)	25	Vapor Density (air=1)	< 1.00
Freeze Point (C)	-4		
Viscosity(cps 70F, 21C)	90	% Solubility (water)	100.0

Odor	Slight
Appearance	Yellow
Physical State	Liquid
Flash Point	P-M(CC) > 200F > 93C
pH As Is (approx.)	2.2

Evaporation Rate (Ether=1) < 1.00

NA = not applicable ND = not determined

10 STABILITY & REACTIVITY

STABILITY:

Stable under normal storage conditions.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

May react with strong oxidizers.

DECOMPOSITION PRODUCTS:

Thermal decomposition (destructive fires) yields elemental oxides.

INTERNAL PUMPOUT/CLEANOUT CATEGORIES:

"B"

11 TOXICOLOGICAL INFORMATION

Oral LD50 RAT: >2,000 mg/kg

NOTE - Estimated value

Dermal LD50 RABBIT: >2,000 mg/kg

NOTE - Estimated value

12 ECOLOGICAL INFORMATION

AQUATIC TOXICOLOGY

Daphnia magna 48 Hour Acute Toxicity (Estimated)

LC50= 1180; No Effect Level= 750 mg/L

Fathead Minnow 96 Hour Acute Toxicity (Estimated)

LC50= 1790; No Effect Level= 310 mg/L

BIODEGRADATION

BOD-28 (mg/g): 31

BOD-5 (mg/g): 9

COD (mg/g): 416

TOC (mg/g): 152

13 DISPOSAL CONSIDERATIONS

If this undiluted product is discarded as a waste, the US RCRA hazardous waste identification number is :
Not applicable.

Please be advised; however, that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

14 TRANSPORT INFORMATION

DOT HAZARD: Not Applicable

UN / NA NUMBER: Not applicable

DOT EMERGENCY RESPONSE GUIDE #: Not applicable

15 REGULATORY INFORMATION

TSCA:

All components of this product are listed in the TSCA inventory.

CERCLA AND/OR SARA REPORTABLE QUANTITY (RQ):

No regulated constituent present at OSHA thresholds

USDA FEDERALLY INSPECTED MEAT AND POULTRY PLANTS:

This product contains ingredients that have been determined as safe for use in systems for cooking or cooling containers of meat and/or poultry and in systems with no food contact. (G5, G7)

SARA SECTION 312 HAZARD CLASS:

Immediate(acute)

SARA SECTION 302 CHEMICALS:

No regulated constituent present at OSHA thresholds

SARA SECTION 313 CHEMICALS:

No regulated constituent present at OSHA thresholds

CALIFORNIA REGULATORY INFORMATION**CALIFORNIA SAFE DRINKING WATER AND TOXIC****ENFORCEMENT ACT (PROPOSITION 65) CHEMICALS PRESENT:**

No regulated constituent present at OSHA thresholds

MICHIGAN REGULATORY INFORMATION

No regulated constituent present at OSHA thresholds

16 OTHER INFORMATION

NFPA/HMIS**CODE TRANSLATION**

Health	1	Slight Hazard
Fire	1	Slight Hazard
Reactivity	0	Minimal Hazard
Special	NONE	No special Hazard
(1) Protective Equipment	B	Goggles, Gloves

(1) refer to section 8 of MSDS for additional protective equipment recommendations.

CHANGE LOG

	EFFECTIVE DATE	REVISIONS TO SECTION:	SUPERCEDES
	-----	-----	-----
MSDS status:	03-SEP-1997		** NEW **
	16-JAN-2001	15	03-SEP-1997
	03-JAN-2002	3,4	16-JAN-2001



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCLEAN® 2568

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : NALCLEAN® 2568

APPLICATION : SCALE REMOVER

COMPANY IDENTIFICATION :
Nalco Company
1601 W. Diehl Road
Naperville, Illinois
60563-1198

EMERGENCY TELEPHONE NUMBER(S) : (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704M/HMIS RATING

HEALTH: 2/2 FLAMMABILITY: 1/1 INSTABILITY: 0/0 OTHER:

0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Consult Section 15 for the nature of the hazard(s).

Hazardous Substance(s)	CAS NO	% (w/w)
Sulfamic Acid	5329-14-6	60.0 - 100.0
Mercaptobenzothiazole	149-30-4	1.0 - 5.0

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER

Corrosive. May cause tissue damage. May cause sensitization by skin contact.
Do not get in eyes, on skin, on clothing. Do not breathe dust. Do not take internally. Use with adequate ventilation.
Keep container tightly closed and in a well-ventilated place. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water.
Wear a face shield. Wear chemical resistant apron, chemical splash goggles, impervious gloves and boots.
Not flammable or combustible. May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of sulfur (SOx) under fire conditions. May evolve oxides of phosphorus (POx) under fire conditions.

PRIMARY ROUTES OF EXPOSURE :

Eye, Skin

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :

Corrosive. Will cause eye burns and permanent tissue damage.

Nalco Company 1601 W. Diehl Road • Naperville, Illinois 60563-1198

(630)305-1000

1 / 10

**MATERIAL SAFETY DATA SHEET****PRODUCT****NALCLEAN® 2568****EMERGENCY TELEPHONE NUMBER(S)****(800) 424-9300 (24 Hours) CHEMTREC****SKIN CONTACT :**

Corrosive; causes permanent skin damage. Repeated or prolonged contact may cause skin sensitization.

INGESTION :

May cause burns to mouth and gastro-intestinal tract.

INHALATION :

Dust may cause severe respiratory tract irritation.

SYMPTOMS OF EXPOSURE :**Acute :**

A review of available data does not identify any symptoms from exposure not previously mentioned.

Chronic :

A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS :

Skin contact may aggravate an existing dermatitis condition.

HUMAN HEALTH HAZARDS - CHRONIC :

No adverse effects expected other than those mentioned above.

4. FIRST AID MEASURES**EYE CONTACT :**

PROMPT ACTION IS ESSENTIAL IN CASE OF CONTACT. Immediately flush eye with water for at least 15 minutes while holding eyelids open. Get immediate medical attention.

SKIN CONTACT :

Immediately flush with plenty of water for at least 15 minutes. Get immediate medical attention.

INGESTION :

DO NOT INDUCE VOMITING. If conscious, washout mouth and give water to drink. Get immediate medical attention.

INHALATION :

Remove to fresh air, treat symptomatically. If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately. Get medical attention.

NOTE TO PHYSICIAN :

Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : None

LOWER EXPLOSION LIMIT : Not flammable

**MATERIAL SAFETY DATA SHEET****PRODUCT****NALCLEAN® 2568****EMERGENCY TELEPHONE NUMBER(S)****(800) 424-9300 (24 Hours) CHEMTREC****UPPER EXPLOSION LIMIT :** Not flammable**EXTINGUISHING MEDIA :**

Use extinguishing media appropriate for surrounding fire.

FIRE AND EXPLOSION HAZARD :

Not flammable or combustible. May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of sulfur (SOx) under fire conditions. May evolve oxides of phosphorus (POx) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :

In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES**PERSONAL PRECAUTIONS :**

Keep people away from and upwind of spill/leak. Do not touch spilled material. Ensure clean-up is conducted by trained personnel only. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection).

METHODS FOR CLEANING UP :

For powder: Sweep up and shovel. Reclaim into recovery or salvage drums.

ENVIRONMENTAL PRECAUTIONS :

Do not contaminate surface water., Prevent product from entering drains.

7. HANDLING AND STORAGE**HANDLING :**

Do not get in eyes, on skin, on clothing. Avoid generating dusts. Do not take internally.

STORAGE CONDITIONS :

Keep in dry place. Store the containers tightly closed.

UNSUITABLE CONSTRUCTION MATERIAL :

Corrosive to steel, copper and alloys., Other common metals

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**OCCUPATIONAL EXPOSURE LIMITS :**

Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

ACGIH/TLV :

Substance(s)

Respirable Nuisance TWA: 3 mg/m³

Particulates

Inhalable (Total) Nuisance TWA: 10 mg/m³

Particulates



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCLEAN® 2568

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

OSHA/PEL :

Substance(s)

Respirable Nuisance

TWA: 5 mg/m3

Particulates

Inhalable (Total)

TWA: 15 mg/m3 (total dust)

Nuisance Particulates

:

Substance(s)

AIHA/WEEL :

Substance(s)

Mercaptobenzothiazole

ENGINEERING MEASURES :

General ventilation is recommended. Local exhaust ventilation may be necessary when this material is heated or a mist is created.

RESPIRATORY PROTECTION :

Respiratory protection is not normally needed. Where concentrations in air may exceed the limits given in this section, the use of a nuisance dust mask is recommended.

HAND PROTECTION :

Impervious gloves

SKIN PROTECTION :

Wear impervious apron and boots.

EYE PROTECTION :

Wear a face shield with chemical splash goggles.

HYGIENE RECOMMENDATIONS :

Keep a safety shower available. Keep an eye wash fountain available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

HUMAN EXPOSURE CHARACTERIZATION :

Based on our recommended product application and personal protective equipment, the potential human exposure is: Moderate

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE Powder

APPEARANCE Light blue

ODOR Sulfurous

BULK DENSITY 80 lb/ft3

SOLUBILITY IN WATER Partial

pH (3 %) 0 - 2

MELTING POINT / 205 °C



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCLEAN® 2568

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

VOC CONTENT 1.06 % Calculated

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY

STABILITY :

Stable under normal conditions.

HAZARDOUS POLYMERIZATION :

Hazardous polymerization will not occur.

CONDITIONS TO AVOID :

Moisture

MATERIALS TO AVOID :

Contact with strong alkalis (e.g. ammonia and its solutions, carbonates, sodium hydroxide (caustic), potassium hydroxide, calcium hydroxide (lime), cyanide, sulfide, hypochlorites, chlorites) may generate heat, splattering or boiling and toxic vapors. Sulfamic acid will react with chlorine or fuming nitric acid.

HAZARDOUS DECOMPOSITION PRODUCTS :

Under fire conditions: Oxides of carbon, Oxides of sulfur, Oxides of phosphorus

11. TOXICOLOGICAL INFORMATION

The following results are for the product.

ACUTE ORAL TOXICITY :

Species	LD50	Test Descriptor
Rat	3,160 mg/kg	Product

SENSITIZATION :

Mercaptobenzothiazole can cause an allergic reaction in sensitive individuals. Repeated or prolonged contact may cause sensitization in some individuals.

CARCINOGENICITY :

None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

HUMAN HAZARD CHARACTERIZATION :

Based on our hazard characterization, the potential human hazard is: High

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

The following results are for the product.

**MATERIAL SAFETY DATA SHEET****PRODUCT****NALCLEAN® 2568****EMERGENCY TELEPHONE NUMBER(S)****(800) 424-9300 (24 Hours) CHEMTREC****ACUTE FISH RESULTS :**

Species	Exposure	LC50	Test Descriptor
Bluegill Sunfish	96 hrs	10 - 100 mg/l	Product
Rainbow Trout	96 hrs	10 - 100 mg/l	Product

Rating : Slightly toxic

ACUTE INVERTEBRATE RESULTS :

Species	Exposure	LC50	EC50	Test Descriptor
Daphnia magna	48 hrs	12 mg/l		Product
Acartia tonsa	48 hrs	12 mg/l		Product
Corophium volutator	240 hrs	2,826 mg/l		

Rating :

AQUATIC PLANT RESULTS :

Species	Exposure	EC50/LC50	Test Descriptor
Marine Algae (Skeletonema costatum)	72 hrs	0.99 mg/l (EC50)	Product

Rating :

MOBILITY :

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM , provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models. If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	Water	Soil/Sediment
<5%	30 - 50%	50 - 70%

The portion in water is expected to be soluble or dispersible.

BIOACCUMULATION POTENTIAL

This preparation or material is not expected to bioaccumulate.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: Moderate

Based on our recommended product application and the product's characteristics, the potential environmental exposure is: Low

If released into the environment, see CERCLA/SUPERFUND in Section 15.

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

**MATERIAL SAFETY DATA SHEET****PRODUCT****NALCLEAN® 2568****EMERGENCY TELEPHONE NUMBER(S)****(800) 424-9300 (24 Hours) CHEMTREC**

As a non-hazardous waste, it is not subject to federal regulation. Consult state or local regulation for any additional handling, treatment or disposal requirements. For disposal, contact a properly licensed waste treatment, storage, disposal or recycling facility.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

LAND TRANSPORT :

Proper Shipping Name :	SULFAMIC ACID MIXTURE, SOLID
Technical Name(s) :	
UN/ID No :	UN 2967
Hazard Class - Primary :	8
Packing Group :	III
Flash Point :	None

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name :	SULPHAMIC ACID, MIXTURE, SOLID
Technical Name(s) :	
UN/ID No :	UN 2967
Hazard Class - Primary :	8
Packing Group :	III
IATA Cargo Packing Instructions :	823
IATA Cargo Aircraft Limit :	100 KG (Max net quantity per package)

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name :	SULPHAMIC ACID, MIXTURE, SOLID
Technical Name(s) :	
UN/ID No :	UN 2967
Hazard Class - Primary :	8
Packing Group :	III

15. REGULATORY INFORMATION**NATIONAL REGULATIONS, USA :****OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :**

Based on our hazard evaluation, the following substance(s) in this product is/are hazardous and the reason(s) is/are shown below.

Sulfamic Acid : Irritant
Mercaptobenzothiazole : Dermal Sensitizer, Corrosive



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCLEAN® 2568

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

CERCLA/SUPERFUND, 40 CFR 117, 302 :
Notification of spills of this product is not required.

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312, AND 313 :

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) :
This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) :
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following indicated EPA hazard categories:

X	Immediate (Acute) Health Hazard
X	Delayed (Chronic) Health Hazard
-	Fire Hazard
-	Sudden Release of Pressure Hazard
-	Reactive Hazard

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :
This product contains the following substance(s), (with CAS # and % range) which appear(s) on the List of Toxic Chemicals

<u>Hazardous Substance(s)</u>	<u>CAS NO</u>	<u>% (w/w)</u>
Mercaptobenzothiazole	149-30-4	1.0 - 5.0

TOXIC SUBSTANCES CONTROL ACT (TSCA) :
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

NSF NON-FOOD COMPOUNDS REGISTRATION PROGRAM (former USDA List of Proprietary Substances & Non-Food Compounds) :

NSF Registration number for this product is : 062339

This product is acceptable for use as an acid cleaner (A3) in and around food processing areas, where its use is not intended for direct food contact. Use of this product in food processing or handling facilities requires that all food products and packaging materials be removed or protected prior to product use. A potable water rinse of cleaned surfaces is required after use of this product. When used according to manufacturer's instructions, the cleaner shall neither exhibit a noticeable odor nor leave a visible residue. This product is acceptable for treating boilers, steam lines, and/or cooling systems (G7) where neither the treated water nor the steam produced may contact edible products in and around food processing areas.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR 116.4 / formerly Sec. 311 :

None of the substances are specifically listed in the regulation.



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCLEAN® 2568

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

CLEAN AIR ACT, Sec. 111 (40 CFR 60, Volatile Organic Compounds), Sec. 112 (40 CFR 61, Hazardous Air Pollutants), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :
None of the substances are specifically listed in the regulation.

CALIFORNIA PROPOSITION 65 :

This product does not contain substances which require warning under California Proposition 65.

MICHIGAN CRITICAL MATERIALS :

None of the substances are specifically listed in the regulation.

STATE RIGHT TO KNOW LAWS :

The following substances are disclosed for compliance with State Right to Know Laws:

Sulfamic Acid

5329-14-6

NATIONAL REGULATIONS, CANADA :

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) :

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS CLASSIFICATION :

D2A - Materials Causing Other Toxic Effects - Very Toxic Material, E - Corrosive Material

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :

The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

INTERNATIONAL CHEMICAL CONTROL LAWS

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS) and are listed on the Australian Inventory of Chemical Substances (AICS).

NEW ZEALAND

This product's trade name is registered with the Environmental Risk Management Authority (ERMA).

16. OTHER INFORMATION

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

* The human risk is: Moderate

* The environmental risk is: Low



MATERIAL SAFETY DATA SHEET

PRODUCT

NALCLEAN® 2568

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

Any use inconsistent with our recommendations may affect the risk characterization. Our sales representative will assist you to determine if your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH, (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Ariel Insight# (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Prepared By : Product Safety Department

Date issued : 02/21/2004

Version Number : 1.7

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ALUMINUM SULFATE, HYDRATE

MANUFACTURER: GEO SPECIALTY CHEMICALS, INC.
9213 Arch Street Pike
Little Rock, AR 72206
(501) 888-1211

24-HOUR EMERGENCY TELEPHONE: CHEMTREC 1-800-424-9300

Aluminum Sulfate, Hydrate complies with the standards of the American Water Works Association B403-93. It has been certified by the National Sanitation Foundation (NSF) under ANSI/NSF 60 for use in the treatment of drinking water at a maximum dosage of 150mg/L (dry basis).

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>COMPONENTS</u>	<u>CAS NUMBER</u>	<u>% (by Weight)</u>	<u>TWA/CEILING</u>	<u>REFERENCE</u>
Al ₂ (SO ₄) ₃ H ₂ O	10043-01-3 7732-18-5	57.0% min balance	2 mg/m ³	OSHA/ACGIH

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: White to light tan colored ground crystalline solid. Causes eye and skin irritation. Harmful if swallowed. Avoid breathing dust.

POTENTIAL HEALTH EFFECTS:

Eyes:	May cause irritation and inflammation of the eye. Concentrated solutions (over 20%) may cause severe eye damage or burns.
Skin:	May cause skin irritation or burns if the product is wet or in the presence of perspiration.
Ingestion:	May cause abdominal pain, nausea, and/or vomiting. Concentrated solutions (over 20%) can cause burns of the mouth, bleeding stomach, incoordination, muscle spasms, and/or kidney injury.
Inhalation:	Dusts are severely irritating to the mucous membranes and respiratory tract.

CHRONIC EFFECTS / CARCINOGENICITY: No evidence of additional adverse effects from repeated or prolonged

MATERIAL SAFETY DATA SHEET

GEO SPECIALTY CHEMICALS, INC.

exposures is noted from available information.

This product does not contain any ingredient designated by IARC, NTP, ACGIH, or OSHA as a probable human carcinogen.

4. FIRST AID MEASURES

- Eyes:** In case of contact, immediately flush with plenty of water for at least 15 minutes holding eyelids open. Use an eyewash fountain if available. Get medical attention if irritation persists, preferably an Ophthalmologist.
- Skin:** Immediately wash skin with plenty of soap and water while removing contaminated clothing and shoes. Wash contaminated clothing separately before reuse.
- Ingestion:** If person is conscious and alert, give two or more glasses of water or milk to drink. If available, give one tablespoon of Syrup of Ipecac to induce vomiting. If vomiting has not occurred in 20 minutes, the same dose of Syrup of Ipecac may be repeated one additional time. Alternately, induce vomiting by touching the back of the throat with a finger. Never give anything by mouth or induce vomiting in an unconscious or convulsing person. Get medical attention.
- Inhalation:** Remove patient to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and get medical attention.

NOTES TO PHYSICIANS:

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Aluminum soluble salts may cause gastroenteritis if ingested. Treatment includes the use of demulcents.

5. FIRE FIGHTING MEASURES

Flammable Properties:

FLASH POINT [C (F)]:	Noncombustible
FLAMMABLE LIMITS IN AIR:	Not applicable
AUTOIGNITION TEMPERATURE (C (F)):	Not applicable

Under fire conditions greater than 650°C (1202°F), product decomposes to give off sulfur trioxide, an oxidizing agent which will support combustion. Sulfur trioxide will react with water to form sulfuric acid.

Extinguishing Media:

Not combustible. Use appropriate extinguishing media for material that is supplying fuel. Use water

MATERIAL SAFETY DATA SHEET

GEO SPECIALTY CHEMICALS, INC.

spray to cool the surrounding area and to maintain fire temperature below decomposition temperature.

Fire Fighting Instructions:

Wear a NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Dike area to prevent runoff and contamination of water sources.

6. ACCIDENTAL RELEASE MEASURES

Vacuum or sweep material and place in appropriate containers for disposal. Avoid dust generation. Stand upwind if possible to evade any fugitive dust. Residual spillage should be cleaned from hard surfaces as appropriate. If spilled on the ground, the affected area should be scraped clean and the material placed in proper containers for disposal. Do not flush material to public sewer systems or any waterways. Wear suitable protective clothing and equipment during clean up activities. Ensure adequate decontamination of tools and equipment following clean up. Large spills should be handled according to a predetermined plan. For assistance in developing a plan, call 1-800-453-2586.

7. HANDLING AND STORAGE

Avoid breathing dusts. Do not swallow. Avoid contact with eyes, skin and clothing. Store in a cool area in tightly closed containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Facilities storing or utilizing this material should maintain an eyewash fountain, safety shower, and sink in the work area.

Provide adequate ventilation. Use local exhaust as needed to maintain airborne exposure below control limits. Where the exposure limits are or may be exceeded, use a NIOSH/MSHA approved respirator for acid dusts. Use positive pressure supplied air or self-contained breathing apparatus for emergency or other conditions where a higher level of protection is required.

Chemical safety goggles, long-sleeved clothing, rubber gloves and boots should be worn.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form:	Crystalline solid
Color:	White to light tan
Odor:	None
Melting Point:	Loses water of hydration @ 88EC (190EF)
Bulk Density:	65 lbs/ft ³
Water solubility (@20EC):	87.3 grams/100 grams water
pH:	3.5 (1% Aqueous solution)

MATERIAL SAFETY DATA SHEET

GEO SPECIALTY CHEMICALS, INC.

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable at ambient temperatures and atmospheric pressure.
Conditions to Avoid:	Avoid high temperatures greater than 650°C (1202°F), because the product decomposes to form aluminum oxide and sulfur trioxide.
Incompatibility with Other Materials:	Reacts with strong alkali to form aluminum hydroxide. Weakly corrosive to carbon steel. On contact with moisture, an acidic solution forms.
Hazardous Decomposition Products:	Thermal decomposition produces aluminum oxide and sulfur oxides.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Oral LD ₅₀ (rats):	> 2000 mg/kg body weight
Dermal LD ₅₀ (rabbits):	> 5000 mg/kg body weight
Inhalation LC ₅₀ (rats):	No information is available
Skin Effects (rabbits):	Non-irritating
Eye Effects (rabbits):	Severe irritant

12. ECOLOGICAL INFORMATION

No information is available.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with Local, State and Federal regulations.

14. TRANSPORT INFORMATION

Transportation Status:	DOT
< RQ:	Not Regulated
> RQ:	Proper Shipping Name: Environmentally hazardous substances, solid, n.o.s. (Aluminum Sulfate, Hydrate)
	Hazardous Class: 9
	ID No: UN 3077
	Packing Group: III
	Label: Class 9

Reportable quantity (RQ) under 49 CFR 172.101 Appendix: RQ = 5000 lbs as 100% Al₂(SO₄),

MATERIAL SAFETY DATA SHEET
GEO SPECIALTY CHEMICALS, INC.

15. REGULATORY INFORMATION

TSCA Inventory Status: The components of this product are listed on the TSCA Inventory.

SARA Title III

Section 302 Extremely Hazardous Substance List: Not listed

Section 313 Toxic Chemicals: Not listed

Reportable Quantity (RQ) under US EPA CERCLA: RQ = 5000 lbs as 100% $Al_2(SO_4)_3$

RCRA Hazardous Waste: Not listed

16. OTHER INFORMATION

National Fire Protection Association Rating (NFPA):

Health - 1

Fire - 0

Reactivity - 1

0 - Minimum

1 - Slight

2 - Moderate

3 - High/Serious

4 - Extreme/Severe

Hazardous Materials Identification System (HMIS):

Health - 1

Fire - 0

Reactivity - 1

MSDS Status: Revised February 12, 2004. Supersedes January 22, 1997.

For additional technical information call 1-800-453-2586.

The information herein is given in good faith but no warranty, expressed or implied, is made.

**SEVERN
TRENT
SERVICES**
SANURIL® 115
Mixed Halogen Formulation
Material Safety Data Sheet

1. GENERAL PRODUCT INFORMATION

Product Name SANURIL® 115
US EPA Reg. No. 48482-5
Synonyms Calcium hypochlorite and 1-bromo-3-chloro-5,5-dimethylhydantoin
Product Use Disinfecting agent for wastewater
NIOSH* Ratings 3 HIGH HEALTH HAZARD
..... 0 NON COMBUSTIBLE
..... 2 MODERATELY REACTIVE

*Ratings based upon *Identification System for Occupationally Hazardous Materials (1974)*

DEPARTMENT OF TRANSPORTATION INFORMATION

Proper Shipping Name Calcium Hypochlorite, Hydrated Mixture RQ
Hazard Class Oxidizer
UN Number UN2880
Shipping Class 55

MANUFACTURER INFORMATION

Company Name Severn Trent Services, Inc.
Street Address 1110 Industrial Boulevard
City, State, Zip Sugar Land, Texas 77478
Emergency Phone 1-800-424-9300
Office Phone (281) 240-6770 Toll Free: 1-800-621-9189
Date Prepared 4/18/1990 Last Revision: 08/07/2000

2. HAZARDOUS INGREDIENTS

Chemical Name	% of Mixture	TLV	PEL	CAS #
Calcium Hypochlorite	69.30%	N/A	N/A	7778-54-3
1-bromo-3-chloro-5,5-dimethylhydantoin	0.94%	10	15	126-06-7
TLV/PEL OF MIXTURE (If known)	N/A			

3. PHYSICAL PROPERTIES

Boiling Point None; dry solid Vapor Density N/A
Melting Point N/A Vapor Pressure N/A
Specific Gravity 1.8 min (tablet) Percent Volatiles N/A
Solubility in Water 6% by weight (min)
pH 8.3 (1% solution)
Density (@ 20°C) 1.0
Color White solid tablet
Odor Slight chlorine. N-bromo compounds have a stench like odor.
It is not as "sweet" as chlorine.

4. ECOLOGICAL INFORMATION
Ecotoxicological Information:

Highly toxic, 10-1 ppm (fish) 96-hour TLM LC50

5. FIRE AND EXPLOSION DATA

Flash Point N/A Explosive Limit Lower: N/A
Auto Ignite Temperature N/A Upper: N/A
Flammability Limits In Air N/A Extinguishing Media Water ONLY

5. FIRE AND EXPLOSION DATA (Cont.)**Special Fire Fighting Procedures:**

This product is a strong oxidizer. Use ONLY water in the event of a fire or a violent reaction may result by contamination. Wear self-contained breathing apparatus.

Unusual Hazard Information:

Contamination with organics, acids, alkalis, and strong reducing agents will result in fire or rapid decomposition. Spontaneous decomposition temperature for this product is 350°F. In large fires fueled by other materials, the product may smolder for prolonged periods emitting dense black smoke.

6. HEALTH HAZARD INFORMATION

This section describes the nature of the hazardous effects resulting from exposure to this product.

Routes of Exposure:

- Ingestion: Highly toxic by ingestion. May cause severe inflammation and erosion to the lining of the esophagus and stomach. Promptly induces vomiting.
- Eye Contact: Mild to moderate exposure to dust causes irritation of the eyes. Severe exposure can cause permanent (irreversible) damage.
- Skin Contact: Mild to moderate exposure to dust may irritate the skin. Greater exposure can cause severe irritation.
- Inhalation: Mild to moderate exposure to dust causes irritation to the mucous membranes of the respiratory passages (nasal and throat).

Effects of Overexposure:

- Acute: Ingestion may result in erosion of the esophagus and stomach. Vomiting, gastric bleeding and possible circulatory collapse. Exposure may cause temporary or permanent tissue damage to skin, eyes, and respiratory passages.
- Chronic: Prolonged and intensive exposure may result in tissue damage to body surfaces unless promptly treated.

Emergency and First Aid Procedures:

- Eyes: IMMEDIATELY flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of entire eye surface. SEEK MEDICAL ATTENTION.
- Skin: Wash with plenty of soap and water. Remove contaminated clothing and footwear. Wash clothing before reuse. Footwear should be decontaminated before reuse. Seek medical attention if symptoms persist.
- Inhalation: Get person out of contaminated area to fresh air. If breathing has stopped, resuscitate and administer oxygen if readily available. SEEK MEDICAL ATTENTION.
- Ingestion: NEVER give anything by mouth to an unconscious person. Drink large amounts of water. DO NOT induce vomiting. Call a physician immediately!

7. REACTIVITY DATA**Conditions contributing to instability:**

Contamination with flammables, organics may cause fire or explosion. Acids will release chlorine and bromine gas.

Incompatibility (Materials to avoid):

Acids, flammables, organic materials, readily oxidizable materials and strong reducing agents.

Hazardous decomposition or byproducts:

Chlorine gas, hydrogen bromide, bromine and hydrogen chloride.

Hazardous polymerization:

This product is not known to polymerize.

8. SPILL OR LEAK PROCEDURES (DEVELOP SPILL PLAN)**Neutralizing Chemicals:**

Sodium sulfite, sodium bisulfite or sodium metabisulfite.

Steps to be Taken if Material is Released and/or Spilled:

Wear appropriate protective gear: rubber gloves and boots. Chemical splash goggles and breathing apparatus if necessary. Avoid contact with clothing—fire may result.

Dilute spill area with large quantities of water, at least 100 gallons of water per pound of material. Avoid contact with resulting solution. Neutralize with sodium sulfite, sodium bisulfite or sodium metabisulfite. Collected neutralized solution should be disposed of through sewage treatment plant. Prior approval from plant personnel as well as Local, State and Federal environmental agencies should be obtained. File environmental spill notifications if necessary.

Waste Disposal Methods:

DO NOT dispose of material in dry form in waste container—fire may result. Proceed with spill procedure as outlined above.

Additional Precautions:

Do not attempt to recover solid material. Do not dispose of material in waste container. Do not reuse empty container, but place in trash collection.

9. INDUSTRIAL HYGIENE CONTROL MEASURES**Ventilation Requirements:**

Work in well ventilated areas. Storage area should be well ventilated.

Specific Personal Protective Equipment:

Respiratory protection is not required under normal use, however when necessary, use NIOSH/MSHA approved respirator following manufacturer's recommendations. NIOSH approved dust mask is essential where dusting may occur.

Eye Protection: Chemical safety glasses should be worn.

Protective Gloves: Gloves should be worn. Rubber or other chemically resistant materials are recommended as suitable material.

Other Clothing and Equipment: Protective clothing should be worn so as to minimize skin contact. Avoid contact with clothing. Fire may result from contact of dry material with cloth or flammables.

10. SPECIAL PRECAUTIONS

Danger:

Highly corrosive. Causes skin and eye damage. May be fatal if swallowed. DO NOT get in eyes or on clothing. Wear goggles and CLEAN protective gloves when handling. Irritating to nose and throat. DO NOT breath dust and fumes. Wash thoroughly with soap and water after handling. Remove and wash contaminated clothing before reuse.

This product is toxic to fish. Do not discharge into lakes, streams, ponds or public waters unless in accordance with an NPDES permit.

Strong oxidizing agent. Mix this product only with water. Use clean dry utensils. Open container only where adequate ventilation is available. Do not add this product to any dispensing device containing remains of any other product. In case of contamination/decomposition, do not reseal container. If possible, isolate container in open air and flood with large volumes of water.

11. STORAGE AND DISPOSAL

Storage:

Keep product dry and in a tightly closed container when not in use. Store in cool, dry, well ventilated area, keeping it away from heat sources and/or open flames. Handle container with care--DO NOT drop, roll or skid. In case of decomposition, isolate container (if possible) and flood with large amounts of water to dissolve all material. Follow "Spill and Leak Procedures" as outlined in Section 8 of this Data Sheet.

Keep in original container. DO NOT store/transfer/repack this product in any other container without the approval/authorization of Severn Trent Services, Inc.

Disposal:

Follow "Spill and Leak Procedures" as outlined in Section 8 of this Data Sheet. DO NOT reuse empty container. Wash thoroughly with water and discard clean container in a safe place.

Do not contaminate food or feed by storage, disposal or cleaning of equipment.

All information, recommendations and suggestions appearing herein concerning our products are based upon tests and data believed to be reliable; however, it is the user's responsibility to determine the safety, toxicity and suitability for his own use of the products described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made Severn Trent Services, Inc., as to the effects of such use, the results to be obtained or the safety and toxicity of the products nor does EIC assume any liability arising out of use by others, of the products contained herein. The information herein is not to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations. Nothing herein contained is to be construed as a recommendation to infringe any patent.

MATERIAL SAFETY DATA SHEET

MSDS NUMBER: MSDS-960

ISSUE DATE: 09/17/02

PAGE 1 OF 5

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name

SODIUM BICARBONATE
(BAKING SODA)

Church & Dwight Co., Inc.
469 N. Harrison Street
Princeton, NJ 08543

Information Phone:
1-609-683-5900 (USA)

Medical Emergency Phone:
1-888-234-1828

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Ingredient

(% by Weight)

CAS Number

Sodium Bicarbonate

100%

144-55-8

Not hazardous under OSHA Standard 29 CFR 1910.1200.

Not a WHMIS controlled substance.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

White crystalline powder; no odor.

Not a fire hazard.

No significant health or environmental effects associated with this material.

HMIS Rating

Health	0
Fire	0
Reactivity	0

Potential Health Effects

EYE: Not an eye irritant.

SKIN CONTACT: Not a skin irritant.

INGESTION: Material is practically non-toxic. Small amounts (1-2 tablespoonfuls) swallowed during normal handling operations are not likely to cause injury as long as the stomach is not overly full; swallowing larger amounts may cause injury (see Note in Section IV).

INHALATION: None known.

Potential Health Effects (cont'd)

SUBCHRONIC EFFECTS/CARCINOGENICITY: Based on published studies on its effects in animals and humans, sodium bicarbonate is not teratogenic or genotoxic. Only known subchronic effect is that of a marked systemic alkalosis. Not classified as carcinogenic by NTP, IARC, OSHA, ACGIH or NIOSH.

469 N. Harrison St. • Princeton, NJ 08543



Telephone: 800 • 221 • 0453

CHURCH & DWIGHT CO., INC.
Specialty Products Division

MATERIAL SAFETY DATA SHEET

MSDS NUMBER: MSDS-960

ISSUE DATE: 09/17/02

PAGE 2 OF 5

4. FIRST AID MEASURES

EYES: Check for and remove contacts. Flood eyes with clean flowing water, low pressure and lukewarm (not hot) if possible, occasionally lifting eyelids.

INGESTION: If large amounts of this material are swallowed, do not induce vomiting. Administer water if person is conscious. Never give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: Large doses may produce systemic alkalosis and expansion in extracellular fluid volume with edema.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASHPOINT: Not combustible

METHOD USED: Not applicable

FLAMMABLE LIMITS

LFL: Not applicable

UFL: Not applicable

EXTINGUISHING MEDIA: Non-combustible material. Use extinguishing media appropriate for surrounding fire.

FIRE-FIGHTING INSTRUCTIONS: Carbon Dioxide may be generated making necessary the use of a self-contained breathing apparatus (SCBA) and full protective equipment (Bunker Gear). Carbon dioxide is an asphyxiant at levels over 5% w/w. Sodium oxide, another thermal decomposition product existing at temperatures above 1564°F is a respiratory, eye, and skin irritant. Avoid inhalation, eye and skin contact with sodium oxide dusts.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None known.

6. ACCIDENTAL RELEASE MEASURES

Scoop up into dry, clean containers. Wash away uncontaminated residue with water.

7. HANDLING AND STORAGE

Store in cool, dry areas and away from incompatible substances (see Section 10).

Sodium Bicarbonate reacts with acids to yield carbon dioxide gas which can accumulate in confined spaces. Do not enter confined spaces until they have been well ventilated and carbon dioxide and oxygen levels have been determined to be safe.



MATERIAL SAFETY DATA SHEET

MSDS NUMBER: MSDS-960

ISSUE DATE: 09/17/02

PAGE 3 OF 5

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: Dust mask required if total dust level exceeds 10 mg/m³.

PROTECTIVE GLOVES: General purpose for handling dry product. Impervious gloves when working with solutions.

EYE PROTECTION: Safety glasses when handling bulk material or when dusts are generated.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Full cover clothing. Apron where splashing may occur when working with solutions.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: White crystalline powder.

ODOR: None.

PHYSICAL STATE: Solid

pH AS IS: Not Applicable

pH (1% SOLN. w/v): 8.2

VAPOR PRESSURE: Not applicable.

VAPOR DENSITY: Not applicable.

BOILING POINT: Not applicable.

FREEZING/MELTING POINT: Not applicable.

SOLUBILITY IN WATER: 8.6 g/100 ml @ 20°C.

BULK DENSITY (g/cc): 62 lb/Ft³

% VOLATILE: Not applicable.

VOLATILE ORGANIC COMPOUNDS: Not applicable.

MOLECULAR WEIGHT: 84.02

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

CONDITIONS TO AVOID: Temperatures above 65°C (150°F).

INCOMPATIBILITY WITH OTHER MATERIALS: Reacts with acids to yield carbon dioxide.

Also may yield free caustic in presence of lime dust (CaO) and moisture (i.e., water, perspiration).

HAZARDOUS DECOMPOSITION PRODUCTS: Heating above 100°C may cause dangerous levels of carbon dioxide gas to be present in confined spaces. Yields sodium oxide if exposed to temperatures above 850°C. Avoid inhalation, eye and skin contact with sodium oxide.

HAZARDOUS POLYMERIZATION: Not applicable.

469 N. Harrison St. • Princeton, NJ 08543



Telephone: 800 • 221 • 0453

CHURCH & DWIGHT CO., INC.
Specialty Products Division

MATERIAL SAFETY DATA SHEET

MSDS NUMBER: MSDS-960

ISSUE DATE: 09/17/02

PAGE 4 OF 5

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: The material was minimally irritating to unwashed eyes and practically non-irritating to washed eyes (rabbits).

SKIN EFFECTS: Not a skin irritant or dermally toxic. Not a contact sensitizer.

ACUTE ORAL EFFECTS: Acute Oral-rat LD₅₀ = 7.3 g/kg.

ACUTE INHALATION: LC₅₀ (rat) > 4.74 mg/l.

12. ECOTOXICOLOGICAL INFORMATION

AQUATIC TOXICITY:

Daphnids: EC₅₀ = 4100 mg/l.

Bluegill: LC₅₀ = 7100 mg/l.

Rainbow Trout: LC₅₀ = 7700 mg/l.

PERSISTENCE: This product is not expected to persist in the environment.

BIOACCUMULATION: This product is not expected to bioaccumulate.

13. DISPOSAL CONSIDERATIONS

Bury in a secured landfill in accordance with all local, state and federal environmental regulations. Empty containers may be incinerated or discarded as general trash.

14. TRANSPORTATION INFORMATION

D.O.T. SHIPPING NAME: Not regulated

TECHNICAL SHIPPING NAME: Sodium Bicarbonate

D.O.T. HAZARD CLASS: None

U.N./N.A. NUMBER: None

HAZARDOUS SUBSTANCE/RQ: None

D.O.T. LABEL: None

15. REGULATORY INFORMATION

CLEAN AIR ACT SECTION 611: Material neither contains nor is it manufactured with ozone depleting substances (ODS).

FEDERAL WATER POLLUTION CONTROL ACT (40 CFR 401.15): Material contains no intentionally added or detectable (contaminant) levels of EPA priority toxic pollutants.

FOOD AND DRUG ADMINISTRATION: Generally Recognized As Safe (GRAS) direct food additive (21 CFR 184.1736).

US DEPARTMENT OF AGRICULTURE: List of Proprietary Substances - Permitted Use Codes 3A, J1, A1, G1, and L1.

469 N. Harrison St. • Princeton, NJ 08543



Telephone: 800 • 221 • 0453

CHURCH & DWIGHT CO., INC.
Specialty Products Division

MATERIAL SAFETY DATA SHEET

MSDS NUMBER: MSDS-960

ISSUE DATE: 09/17/02

PAGE 5 OF 5

CERCLA REPORTABLE QUANTITY: None

OSHA: Not hazardous under 29 CFR 1910.1200

RCRA: Not a hazardous material or a hazardous waste by listing or characteristic.

SARA TITLE III:

Section 302, Extremely Hazardous Substances: None

Section 311/312, Hazardous Categories: Non-hazardous

Section 313, Toxic Chemicals: None

Sodium Bicarbonate is reported in the EPA TSCA Inventory List.

This material is listed on the Canadian DSL.

Not classified as carcinogenic by NTP, IARC, OSHA, ACGIH or NIOSH.

This material is neither a volatile organic compound nor does it contain VOCs.

NATIONAL STOCKING NUMBER: 6810002646618, Contract No. DLA 40086C1831

NSF STANDARD 60: Corrosion and Scale Control in Potable Water. Max use 200 mg/l.

EUROPEAN INVENTORY (EINECS): 205-633-8

JAPANESE INVENTORY (MITI): 1-164

AUSTRALIAN INVENTORY (AICS): Carbonic acid, monosodium salt.

16. OTHER INFORMATION

SUPERSEDES DATE: 07/02/02

REASON FOR REVISION: Conversion to a 16 Section Format and added Ecotoxicological information.

For additional non-emergency health, safety and environmental information telephone 609.279.7705 or write to:

Church & Dwight Co. Inc.
R & D Technical Regulatory Affairs
469 North Harrison Street
Princeton, New Jersey 08543

This Product Safety Data Sheet is offered solely for your information, consideration and investigation. Church & Dwight Co., Inc. provides no warranties, either express or implied, and assumes no responsibility for the accuracy or completeness of data contained herein. Church & Dwight Co., Inc. urges persons receiving this information to make their own determination as to the information suitability for their particular application.

469 N. Harrison St. • Princeton, NJ 08543



Telephone: 800 • 221 • 0453

CHURCH & DWIGHT CO., INC.
Specialty Products Division



M.S.D.S.

1. Identification of the substance/preparation and company/undertaking.

NAME BIO-SYSTEMS B500-F BLUE

MSDS No B500-F BLUE USA

Synonyms: bacterial products.

Common uses: waste water treatment and drain cleaner

Supplied by: BIO-SYSTEMS International

1238 E. Inman Pkwy
Beloit, WI
53511

Tel: 608-365-9550

Fax: 608-365-9467

Emergency No. 800-232-2847

Emergency No. (24 hours) 608-365-9550

2. Composition/information on ingredients.

Contains:

Bacterial Cultures less than 1% by weight.

Blend of naturally occurring ingredients as a carrier including, corn and wheat bran and kelp. 79%

<u>Hazardous Ingredient / Impurity</u>	<u>% Conc.</u>	<u>Classification</u>	<u>Exposure</u>	<u>CAS</u>	<u>EINECS</u>
Silica, Amorphous	20			007631869	

3. Hazards Identification.

Classification:

Bacterial culture non pathogenic

4. First Aid measures.

Immediate medical attention is required in case of exposure by inhalation, contact with skin or eyes, or if swallowed.

<u>Exposure Route</u>	<u>Symptom</u>	<u>Treatment</u>
Inhalation	Same as exposure to dust.	Remove from exposure, rest and keep warm. In severe cases, or if recovery is not rapid or complete seek medical attention.
Skin Contact	Redness and irritation	Drench the skin with plenty of water. Remove contaminated clothing and wash before reuse. If large areas of the skin are damaged or if irritation persists seek medical attention.
Eye Contact	Same as dust	Irrigate thoroughly with water for at least 10 minutes. Obtain medical attention.

B500-F USA

Ingestion Irritation of gastrointestinal tract, nausea, diarrhea Wash out mouth with water. Do not induce vomiting. If patient is conscious, give water to drink. If patient feels unwell seek medical attention.

Immediate Treatment / Antidote: symptomatic treatment

Delayed Effects: bacterial infection

5. Fire Fighting measures.

Suitable Extinguishers: water

Unsuitable Extinguishers:

Hazardous Combustion Products: none in normal use. Large dust accumulations can be explosive, similar to a grain dust explosion. If dust is created, static electricity may accumulate and create a fire hazard.

Special Equipment for Fire Fighting: self contained breathing apparatus

6. Accidental Release measures.

Personal Precautions: Wear appropriate PPE - See section 8

Environmental Precautions: The bacteria and carriers are naturally occurring and should not pose an environmental risk.

Clean up Procedure: Vacuum or sweep up avoiding generation of dust. Place in suitable labelled containers and hold for waste disposal. Wash spill site with water. If bacterial contamination is an issue use chlorine to kill the bacillus spores.

7. Handling & Storage.

Handling

Ventilation: Good general ventilation.

Recommended procedures & equipment: avoid creating dust

Storage

Temperature range: 0 deg C to 40 deg C for product viability only.

Humidity range: less than 40% for long term exposure of unprotected product for product viability only.

Keep away from: See section 10

Suitable storage Media: original container with closed lid

Precautions against static discharge: recommended.

8. Exposure Controls/personal protection.

Exposure standards:

Component	LTEL (8h TWA)	STEL (15 mins)	Type
None			

Personal Protective Equipment:

Respiratory: Dust mask

Hand: Wash hands after use. Gloves recommended

Eye: Safety glasses or goggles recommended.

B500-F USA

Skin: Wash after exposure. Overalls and boots recommended

Environmental controls: Users should be aware of environmental considerations and their duties under the environmental protection act.

Hygiene Measures: Always wash thoroughly after handling chemicals.

9. Physical & Chemical Properties.

Appearance	Blue powder free flowing
Odor	Yeast like odor
pH	Neutral 6.0 to 7.0 in water dispersion
Boiling Point/range	Not Applicable
Melting Point/range	Not Applicable
Flash point	Not Applicable
Flammability	Not flammable under normal conditions of storage and handling.
Autoignition temperature	Not Applicable
Explosive limits	Na except in presence of large dust cloud
Oxidizing Properties	Non
Vapour Pressure	Not Applicable
Relative density	0.6 to 0.8
Solubility in water	Not soluble. Disperses in water.
Solubility in solvent	Not soluble
Partition coefficient	Not Applicable
Viscosity	Not Applicable
Vapour density	Not Applicable
Evaporation rate	Not Applicable
Conductivity	Not Applicable

10. Stability & Reactivity.

Stability: Stable under normal storage and handling conditions.

Conditions to avoid: Accumulations of product in enclosed spaces and generation of dust.

Materials to avoid: Acids and Alkalies may inactivate the bacterial cultures.

Hazardous decomposition products: oxides of carbon, silicon dioxide, carbon dioxide, and traces of incompletely burned carbon products.

11. Toxicological Information.

Toxicological effects: Low Acute oral toxicity although ingestion will cause irritation of the gastrointestinal tract and may result in nausea and diarrhea. May cause mild mechanical irritation to eyes, skin and mucous membranes. May cause irritation from allergic reaction, especially to people that have a history of allergic reaction.

LD_{Lo}

LD₅₀

oral-rat

skin-rabbit

12. Ecological Information.

B500-F USA

Environmental Effects: Minimal impact under normal conditions of use and storage. The bacterial cultures are naturally occurring soil type organisms. The carriers are naturally occurring materials.

Mobility: disperses in water

Degradability: contents are biodegradable

Bioaccumulative potential: Not Known

Aquatic Toxicity: Not Known

13. Disposal considerations.

Substance: Via an authorized waste disposal contractor to an approved waste disposal site, observing all local and national regulations.

Container: As substance.

14. Transport Information. Not regulated for transport

UN number	Class
Primary Hazard	Subsidiary Hazard
Packing Group	Emergency Action Code
H.I. Number	Marine Pollutant
Proper Shipping name	Water treatment compounds, bacterial culture.

15. Regulatory Information.

Label Name BIO-SYSTEMS B500-F BLUE
Symbols no risk or safety phrases stipulated
Risk Phrases no risk or safety phrases stipulated
Safety Phrases no risk or safety phrases stipulated
E.C. No

Additional labeling:

Use of this material may be governed by the following regulations: - (users are advised to consult these regulations for further information).

The information contained in this data sheet does not constitute an assessment of workplace risks.

16. Other Information.

This material must not be used for direct contact with food:

Further details may be available upon request from your local BIO-SYSTEMS Corp. distribution site.

Other: The product has been shown to be free of Salmonella and Shigella using the procedures outlined by AOAC and USDA.

Legal Disclaimer:

The above information in this MSDS was obtained from sources which we believe are reliable. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED, REGARDING ITS CORRECTNESS. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, OR USE OF THIS PRODUCT.

Material Safety Data Sheet
AQUAFIX, Inc. 2/05/04

Section 1- Product and Company Identification

Product Name: *D-Foam 3000*
AQUAFIX, Inc
P.O. Box 8682
Madison, WI 53708-8682
p. 888-757-9577
f. 866-636-1493

Section 2- Composition and Information on Ingredients

Chemical Family: *polyglycol*
Product contains no known hazardous components as listed in 29 CFR 1900.1000
Chemical Name: *Oxirane, methyl-polymer CAS # 9003 11- 6 100%*

Section 3- First Aid Measures

Eye Contact-	<i>Immediately rinse eyes with plenty of water. Remove any contact lenses and continue rinsing for at least 15 minutes. If irritation persists, consult a physician.</i>
Skin Contact-	<i>In keeping with good hygiene practices, wash exposed areas with soap and water.</i>
Inhalation-	<i>Remove to fresh air.</i>
Ingestion-	<i>If Swallowed, dilute with water and INDUCE VOMITING. Call a physician immediately</i>

Section 4- Fire and Explosion Data

Flammable Limits in air, % by volume, ND
Flash Point-Greater than 300 degrees F, PMCC
Auto Ignition-Temperature not available
Combustion-Produces carbon dioxide, carbon monoxide, smoke, and fumes
Fire Fighting Instructions-Use dry chemical, foam, carbon dioxide or water fog
Fire Fighting Protection-Wear self-contained breathing apparatus and protective clothing.

Section 5-Accidental Release Measures

Accidental Spill - *Wipe surface to prevent slippery surface. Soak up with an inert absorbent material and dispose of in an appropriate waste container for combustible waste.*

Large Spill- *Contain spill and dispose of in accordance with local, state and federal regulations.*

Section 6- Handling and Storage

Store in a cool, dry place. Store in a tightly closed container

Section 7- Exposure Controls/Personal Protection

Ventilation-	<i>Keep adequate ventilation</i>
Eye Protection-	<i>Eye irritant, wear eye protection.</i>
Skin Protection-	<i>Use gloves if prolonged contact is expected.</i>
Respiratory-	<i>Inhalation of vapors may result in respiratory irritation</i>
Working with-	<i>Wash hands with soap and water.</i>

Section 8- Physical and Chemical Properties

Description-Liquid
Specific Gravity- 1.02 @ 25 degrees Celsius
pH-7.0
Vapor Density-Greater than 1
Color-Slightly Cloudy
Odor -mild polyol
volitale-Less than 1%

Section 9-Stability and Reactivity Data

Chemical Stability-	The product is stable
Incompatibility-	None
Conditions to avoid-	Keep away from extreme heat, sparks, open flame and strong oxidizers.
Hazardous Polymerization -	Thermal Decomposition may produce carbon oxides.
Corrosive Properties-	Not Corrosive
Oxidizer Properties-	Not an oxidizer

Section 10-Disposal Concerns

Dispose of in accordance with state, local, and federal regulations

Section 11- Regulatory Information

HMIS Ratings - Health 1, Fire-1, Reactivity-0

Additional Regulatory Remarks - The information in the MSDS was obtained from sources which we believe to be reliable. However, the information is provided without any warranty expressed or implied regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. This MSDS was prepared and is to be used only for this product. No representation, warranty or guarantee of any kind, express or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.

Exelon Generation
Quad Cities Generating Station
22710 206th Avenue North
Cordova, IL 61242-9740
Tel 309-654-2241

www.exeloncorp.com

SVP-04-079

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

September 10, 2004

Mr. Blaine Kinsley
Permit Writer, Quad Cities Station
IEPA Permit Section
Illinois Environmental Protection Agency
Water Pollution Control, Permit Section #15
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276


Subject: Renewal of NPDES Permit No. IL0005037
Quad Cities Nuclear Power Station

Dear Mr. Kinsley:

Exelon Generation Co., LLC, Quad Cities Nuclear Power Station, would like to request an exemption from the sampling and analysis for pollutants categorized as GC/MS Fraction Compounds in Part V-C of the Consolidated Permit Application for the subject NPDES permit application. Relief from this sampling requirement was requested and granted by the Agency in February 1998 in preparation for the previous NPDES permit application, per 40 CFR, Part 122, Subpart B, Section 122.21. Based on the above information, we believe that this request is appropriate and would like to thank you in advance for your consideration in this matter.

If you have any questions, please contact Mark Stuhlman at (309) 227-2765.

Sincerely,


Timothy J. Tulon
Site Vice President
Quad Cities Station

TJT/MS/tsr

cc: J. Bolte, NGG Environmental

Mark Stuhlman

Letterbook

Exelon Generation Company, LLC www.exeloncorp.com
Quad Cities Nuclear Power Station
22710 206th Avenue North
Cordova, IL 61242-9740
SVP-04-097

November 17, 2004

Certified Mail

Mr. Al Kellar
Illinois Environmental Protection Agency
Manager, DWPC Permit Section #15
1021 North Grand Avenue East
P. O. Box 19276
Springfield, Illinois 62794-9276

Subject: Quad Cities Generating Station Request for Schedule to Submit
Information to Comply with the Phase II 316(b) Rule (40CFR Part 125
Subpart J)

By this letter Exelon Generation Company, LLC, ("Exelon") requests a schedule for submitting the information required by USEPA's New Phase II 316(b) Rule for cooling water intake structures for the Quad Cities Generating Station ("Quad Cities"). We ask that we be allowed to submit to you the information required by 40 CFR 125.95 by no later than January 7, 2008. For the reasons described below, this date is as "expeditious as practicable" for Quad Cities to develop, prepare and submit the required information.

As you know, on July 9, 2004, USEPA published its final rule prescribing how "existing facilities" may comply with Section 316(b) of the Clean Water Act. 69 Fed. Reg. 41575, 41683 (July 9, 2004). For most existing facilities, this rule will require a large amount of data to establish "best technology available" for the facility's intake structure and to demonstrate compliance with the rule.

Quad Cities is a "Phase II existing facility" within the meaning of 40 CFR 125.91. As such, it is required to comply with the Phase II rule, and in particular to submit the studies and information required by 40 CFR 125.95.

Section 125.95 of the new rule requires detailed studies and other information to establish what intake structure technology or other measures will be used to comply with the rule. Ordinarily, this material is to be submitted with the facility's next application for renewal of its NPDES permit. See 40 CFR 125.95, 122.21(r)(1)(ii), 122.21(d)(2). For permits that expire less than four years after the rule was published on July 9, 2004 (that is, before July 9, 2008), the operator may have up to three and half years to submit the information, so long as it is submitted "as expeditiously as practicable." See 40 CFR 125.95(a)(2)(ii). The facility may have even longer, until the end of the permit term, under 40 CFR 122.21(d)(2)(i), if the permitting agency agrees.

The current NPDES permit for Quad Cities expires on May 31, 2005, well before July 9, 2008. We, therefore, request that Exelon be allowed to submit the information called for by Section 125.95 for Quad Cities as expeditiously as practicable, which, as explained below, will require until January 7, 2008.

In order to satisfy the "expeditiously as practicable" requirement, Exelon began taking steps regarding data collection and analysis even before the rule was published. We began as early as May 2004, by organizing our internal 316(b) team and utilizing an outside consultant to help understand and analyze the Phase II Rule requirements and determine our data collection needs. This process included compiling and assessing previously collected impingement data as well as ongoing collection of impingement data relative to the data collection requirements of the Phase II Rule. Quad Cities also began to analyze compliance alternatives and related costs. As required by the Rule, Quad Cities has begun compiling and organizing its cooling water system data, existing intake technology information and source water flow information. Since the Rule's publication, Exelon also assessed and obtained management approval of an internal budget to implement 316(b) activities related to Quad Cities Station. Exelon is coordinating and working with the national Utilities Water Act Group and the Illinois Environmental Regulatory Group regarding rule requirements and implementation. Despite our early start, we will still need until January 7, 2008, to complete the studies and collect the information, and prepare the submittal required by 40 CFR 125.95. Our detailed schedule is explained below.

Proposal for Information Collection

Under 40 CFR 125.95(a)(1), we must submit to you a Proposal for Information Collection ("PIC"). The PIC must contain the items listed in 40 CFR 125.95(b)(1), including a description of proposed and/or implemented technologies, operational measures, and/or restoration measures to be evaluated, a list and description of historical studies characterizing impingement mortality and entrainment and/or the physical and biological conditions in the vicinity of the cooling water intake structures and their relevance to the proposed study. For existing data, it must demonstrate the extent to which the data are representative of current conditions and that the data were collected using appropriate quality assurance/quality control procedures. The PIC must also include a summary of past or ongoing consultations with federal, state and wildlife agencies and a copy of their written comments, as well as a sampling plan for any new field studies describing all methods and quality assurance/quality control procedures for sampling and data analysis.

Impingement Mortality and/or Entrainment Characterization Study

The Rule requires an Impingement Mortality and/or Entrainment Characterization Study for affected facilities. The study must include (i) taxonomic identifications of all life stages of fish, shellfish, and any species protected under federal, state, or tribal law that are in the vicinity of the cooling water intake structures and are susceptible to impingement and entrainment; (ii) a characterization of all life stages of fish, shellfish, and any protected species, including a description of the abundance and temporal and spatial characteristics in the vicinity of the cooling water intake structures, based on sufficient data to characterize annual, seasonal, and diel variations in impingement mortality and entrainment (e.g., related to climate and weather

differences, spawning, feedings, and water column migration). These may include historical data that are representative of current operation of the facility and of biological conditions at the site.

We must also document the current impingement mortality and entrainment of all life stages of fish, shellfish, and protected species and provide an estimate of impingement mortality and entrainment to be used as the "calculation baseline." See 40 CFR 125.95(b)(3)(iii). This may include historical data representative of the current operation of the facility and of biological conditions at the site. Impingement mortality and entrainment samples to support the calculations must be collected during periods of representative operational flows for the cooling water intake structure, and the flows associated with the samples must be documented.

Quad Cities is currently analyzing its past and ongoing data collection in order to determine what, if any, additional sampling may be needed in order to satisfy this requirement. We estimate that we will need until March 31, 2005, to complete this analysis. If the Station determines that additional sampling and study should be conducted, we estimate that we will complete these activities by December 31, 2006.

Quad Cities' PIC submittal will directly follow our analysis of whether any additional sampling should be conducted, which is scheduled to be completed by March 31, 2005. We estimate that we will need until April 15, 2005, to finalize and submit the PIC to IEPA.

We will be interested in learning and understanding your reaction to the PIC. Consistent with the rule, we will ask that you either approve it or advise us of any needed changes within 60 days following our submittal. See 40 CFR 125.95(a)(1), 125.95(b)(1). In order to expedite your review and understanding of our PIC, we will be available to meet and discuss our PIC with you in person.

Evaluation of Compliance Alternatives - Comprehensive Demonstration Study

While we are assessing and implementing any additional sampling obligations, we will also be continuing to evaluate available 316(b) compliance alternatives for Quad Cities, including the possibility of using design and construction technologies and/or operational measures; restoration measures; and/or site-specific requirements. In addition, we must prepare a Verification Monitoring Plan to confirm our results. Below are descriptions of these requirements. We estimate that we will need until May 2007, to complete the required analysis and internally prepare and review our CDS. Following the preparation of the CDS, we will develop our Quad Cities NPDES permit renewal application and engage in any needed meetings and/or other dialogue with IEPA and USEPA. We plan to complete these steps by no later than December 1, 2007 so that we will submit our 316(b) Phase II requirements to IEPA by no later than January 7, 2008.

Design and Construction Technology Plan

Any Design and Construction Technology Plan must explain the technologies and/or operational measures that we have in place and/or have selected to meet the requirements of the rule.

This Design and Construction Technology Plan must contain a large amount of information, as described in 40 CFR 125.95(b)(4)(A)-(D). This information includes (A) a narrative description of the design and operation of all design and construction technologies and/or operational measures, including fish handling and return systems, and information that demonstrates the efficacy of the technologies and/or operational measures; (B) a narrative description of the design and operation of all design and construction technologies and/or operational measures and information that demonstrates the efficacy of the technologies and/or operational measures for entrainment; (C) calculations of the reduction in impingement mortality and entrainment of all life stages of fish and shellfish that would be achieved by the technologies and/or operational measures we have selected; and (D) design and engineering calculations, drawings, and estimates prepared by a qualified professional to support the descriptions described above.

Technology Installation and Operation Plan (TIOP)

Assuming we decide that the best way to comply with the Phase II rule is to use design and construction technologies and/or operational measures, in whole or in part, we must submit to you the following information, in accordance with 40 CFR 125.95(b)(4)(ii): (A) A schedule for the installation and maintenance of any new design and construction technologies; (B) a list of operational and other parameters to be monitored and the location and frequency that we will monitor them; (C) a list of activities we will undertake to ensure to the degree practicable the efficacy of installed design and construction technologies and operational measures and our schedule for implementing them; (D) a schedule and methodology for assessing the efficacy of any installed design and construction technologies and operational measures in meeting applicable performance standards or site-specific requirements, including an "adaptive management plan" for revising design and construction technologies, operational measures, operation and maintenance requirements, and/or monitoring requirements in the event our assessment indicates that applicable performance or site-specific requirements are not being met; and (E) if we choose the compliance alternative in 125.94(a)(4) (wedge-wire screens or a technology approved by the state), documentation that the appropriate site conditions described in 125.99(a) or (b) exist at our facility.

Restoration Plan

If we determine that we will use restoration measures to comply with the new rule, in whole or in part, we must provide you a Restoration Plan. This must include the information described in 40 CFR 125.95(b)(5). It must include a plan using an adaptive management method for implementing, maintaining, and demonstrating the efficacy of the restoration measures that we select and for determining the extent to which the restoration measures, or the restoration measures in combination with design and construction technologies and operational measures, have met the applicable performance standards.

Site-Specific Requirements

If we determine that site-specific requirements are appropriate because the cost of complying with the Phase II rule will be "significantly greater" than either the cost that EPA considered in its rulemaking or the benefits of complying with the rule, we will have to submit the information

described in 40 CFR 125.95(b)(6). This includes a Comprehensive Cost Evaluation Study and, for the cost-benefit analysis, a Benefits Evaluation Study. We must also include a Site-Specific Technology Plan describing and justifying the site-specific requirements.

Verification Monitoring Plan

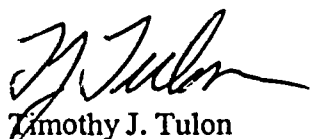
Finally, we must prepare a Verification Monitoring Plan. See 40 CFR 125.95(b)(7). This is a plan to conduct, at a minimum, two years of monitoring to verify the full-scale performance of the proposed or already implemented technologies and/or operational measures.

Conclusion

Despite our early efforts, we recognize that collecting, generating, compiling, and analyzing the large amount of information required by the Phase II 316(b) rule will require a substantial effort. This may require us to generate significant new biological information and perform complex technical analysis of compliance alternatives. We hope to coordinate closely with your Agency as we collect the necessary information, perform our analyses, and determine what combination of technology, operational measures, or restoration measures will best meet the Phase II rule for Quad Cities. We hope that your staff will be available to consult with us over the next few months as we complete these efforts.

For the above reasons, we request that we be allowed until January 7, 2008, to submit the information required for a permit application by the Phase II Rule, 40 CFR Part 125 Subpart J.

Sincerely,



Timothy J. Tulon
Site Vice President
Quad Cities Generating Station

Cc: Blaine Kinsley, IEPA Permit Section
Vicki Neels
Mark Stuhlman
John Petro
Robert King
Larry LaJeone
Letterbook