GPU Nuclear

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April 10, 1994
C311-94-2054

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

Dear Sir:

Subject: Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320
NPDES Permit PA 0009920 Renewal Application

On March 13, 1991, GPU Nuclear submitted to the Commonwealth of Pennsylvania Department of Environmental Resources (PADER) an application to renew NPDES Permit PA 0009920 (Attachment 1) for Three Mile Island Nuclear Station (TMINS). On October 2, 1992, a revised renewal application for NPDES Permit PA 0009920 was submitted to the PADER. TMI-2 Technical Specification 6.14, State and Federal Permits and Certificates, requires GPU Nuclear to concurrently submit to the NRC any changes, additions, or request for changes to the TMINS NPDES permit submitted to the PADER.

A copy of NPDES Permit PA 0009920 renewal application was not concurrently submitted to the NRC in 1991 or 1992 because of an administrative oversight. Enclosed for your review is a copy of the 1992 TMINS NPDES renewal application. The TMINS NPDES renewal application has not to date been acted upon by the PADER. The PADER expects to act on the renewal application during 1994.

Please contact either John Schork, TMI Licensing Engineer, (717) 948-8832, or Scott Cogley, Consultant, Environmental Licensing, (717) 948-8881, if you have any questions regarding this matter.

Sincerely,

T. G. Broughton
Vice President and Director, TMI

JSS/emf

COD1 1/1

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October 2, 1992
C331-92-2051

Mr. Edward J. Corriveau, P.E.
Chief, Permits and Grants Section
Bureau of Water Quality Management
Pennsylvania Department of Environmental Resources
One Ararat Boulevard
Harrisburg, PA 17110

Dear Mr. Corriveau:

Subject: Application for Renewal of NPDES Permit PA 0009920
Three Mile Island Nuclear Station (TMINS)

In March 1991, GPU Nuclear (GPUN) submitted an application to renew NPDES Permit PA 0009920. In an effort to maintain our application in an up to date manner so as to accurately reflect operating conditions at TMINS, GPUN has determined it necessary to revise its application. Enclosed are three sets of GPUN's revised renewal application (one notarized original and two copies). This revised application superceeds GPUN's submittal made to the Department on March 31, 1991. Once again the application consolidates sewage effluent and industrial effluents into a single comprehensive NPDES permit for TMINS. To assist the Department in easily determining changes that have been made, included is a list of pages and attachments that have been revised.

Additionally, GPUN would like to bring to the Department's attention areas within the current permit that GPUN believes should be revised to facilitate a better understanding of permit conditions. Provided is a revised permit with the recommended changes indicated in bold print to assist the Department when drafting TMINS' new permit.

If you have any questions or require additional information regarding this submittal, please contact Mr. Scott R. Cogley, Site Environmental Licensing Consultant, at (717) 948-8881.

Sincerely,

T. G. Broughton
Vice President and Director, TMI-1

DFM/amk

Attachments

Certified Mail Return Receipt Requested

THREE MILE ISLAND NUCLEAR STATION
NPDES PERMIT PA 0009920

LIST OF PAGES CHANGED IN RENEWAL APPLICATION

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ATTACHMENT 3 FIGURE
ATTACHMENT 3 TABLE
ACCO FLOC MSDS
SAG 2001 MSDS
BETZ C-78P MSDS
WATER USE SCHMATIC
NPDES FLOW CHART

LISTING OF NPDES PERMIT PA 0009920

REAPPLICATION ATTACHMENTS

ATTACHMENT NO.	TITLE
1	NPDES Permit PA 0009920 Reapplication
2	Act 14 Notification (Section I)
3	Topographical Map (Section I)
4	Material Safety Data Sheets (Section VI)
5	NPDES Flow Chart Schematic (Section I)
6	Water Use and Consumption Schematic (Section I)
7	Site Plan and Stormwater Runoff (Section I)

ATTACHMENT 1

NPDES Permit PA 0009920 Reapplication

EK 8WQ-288.10 Rev 12/87

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

Application for NPDES Permit
New and Existing Industrial Dischargers

Applicant Name: GPU Nuclear Corporation

Name of Facility: Three Mile Island Nuclear Station (TMINS)

NPDES Number: PA 0009920
(if known)

Facility Location: Londonderry Township **(municipality)** Dauphin **(county)**

Date of Submittal: March 13, 1991 Revised October 2 , 1992

Pennsylvania Department of Environmental Resources
Bureau of Water Quality Management

APPLICATION FOR DISCHARGE PERMIT IS.

NEW ☐ RENEWAL ☒ MODIFICATION ☐

NPDES Number PA 0009920

I. PHYSICAL LOCATION AND GENERAL INFORMATION

A. Name of Facility: Three Mile Island Nuclear Station

B. Facility Location (Street): Route 441 South

City or Town: Middletown Zip Code: 17057

County: Dauphin

C. Facility Operator (Permit Applicant) Information

Operator (Applicant) Name: GPU Nuclear Corporation

Does the Operator own the facility? ☐ yes ☒ no

Status of Operator: Federal ☐ State ☐ Private ☒ Public ☐

Other:

Phone (717) 348 - 8000

Street: P.O. Box 480 City or Town: Middletown

State: Pennsylvania Zip Code: 17057

D. SIC Codes — Corresponding SIC Description

1st 4911 Steam Electric Power Generation

2nd

3rd

4th

E. General Description and Nature of Business

Electric Power Generation

NPDES Number PA 0009920

F Attach Topographic Map See instructions
See Attachment)

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

OUTFALL NUMBER (list)	LATITUDE			LONGITUDE			RECEIVING WATER (name)
	DEG.	MIN.	SEC.	DEG.	MIN.	SEC.	
DSN 001	40	09	10	76	43	40	Susquehanna River
DSN 002	40	09	10	76	43	40	Susquehanna River
DSN 003	40	09	10	76	43	40	Susquehanna River
DSN 004	40	09	10	76	43	20	Susquehanna River
DSN 005	40	09	10	76	43	35	Susquehanna River

H. Preparedness, Prevention, and Contingency (PPC) Planning

Does the facility have a PPC plan which has been reviewed and approved by the Department?

☒ Yes _____ Date of Approval Original submittal: May 9, 1983
☐ No, (attach 2 copies for review and approval) PA Storage Tank Act Resubmittal: August 2, 1990
Note: Formal approval never received from PaDER.

Does the facility have any other related plans, such as a Pollution Incident Prevention (PIP) Plan or a Spill Prevention Control and Countermeasure (SPCC) Plan? ☐ Yes ☒ No

If yes, identify and indicate date(s) approved by the Department or EPA.

NPDES Number PA 0009920

1. Line Drawing (see instructions) (use separate attached sheet(s) if desired).

See Attachment 4: NPDES Flow Chart Schematic

See Attachment 5: Water Use and Consumption Schematic

NPDES Number PA 0009920

J. Site Plan and Stormwater Runoff - Use space below or an attached diagram (see instructions)

See Attachment 6: EMINS Type 1 Stormwater Discharge Point Sources

NPDES Number PA 0009920

II. NEW SOURCE DETERMINATION

Referring to the instructions for this question, indicate when "construction" (as defined by EPA) and discharge began for the facilities causing each discharge. If "construction" has not begun, state when it will begin.

Do not complete this table for outfalls which only discharge sanitary wastewater or stormwater runoff (unless considered "process wastewater" under an EPA effluent guideline regulation).

NOTE: This section is not applicable to this reapplication

Outfall Number	Date "Construction" Began*	Date Discharge Began**	Facilities Causing Discharge	Outfall(s)
(Lagoon	9/12/75	10/18/75	Carpet weaving and dyeing	001, 002

* If "construction" began on different dates for facilities which contribute to the same outfall, list these dates separately (use additional sheets if necessary).

** If not yet discharging, indicate date on which discharge is expected to begin.

NPDES Number PA 0009920

III. OUTFALLS AND ASSOCIATED WASTEWATER TREATMENT TECHNOLOGIES

Outfall Number	Treatment Unit Description (list in sequence)	Treatment Unit Code See Table II	Treatment Unit Design Flow Rate (10^6 gal/day)	Methods for Handling and Disposal of Solid or Liquid Residue Resulting from Treatment (list in sequence)	Handling and Disposal Code
001	Circulating Water (TMI-1) Secondary Service, RB Emerg. Cooling, Decay Heat, Nuclear Services Water:		For Unit 1 Q= 83 For Unit 2 Q= 46		
	- Evaporation/Cooling	1-F/4-F		N/A	
	- Detoxification *	N/A		N/A	
	- Discharge to Surface Water via DSN 001	4-A		N/A	
	* for Betz C-74		Approximate Total Q= 129		
001	Sewage Treatment - DSN 101		0.08 Design Maximum		
	(Note: DSN 101 currently regulated under NPDES Sewage Permit No. PA 0081698).				
	- Grinding/Screening	1-L/1-T		N/A or Landfill (Screening)	5-Q
	- Flow Equalization	1-Y		N/A	
	- Activated Sludge/ Extended aeration	3-A		Aerobic Digestion and Land Application	5-A 5-P
	- Chemical Precipitation (Phosphorous Control)	2-C		N/A	
	- Neutralization	2-K		N/A	
	- Flocculation	1-G		N/A	
	- Sedimentation (Solids Removal)	1-U		Aerobic Digestion and Land Application	5-A 5-P
	- Disinfection (Chlorination)	2-F		N/A	
	- Discharge to Surface Water via DSN 001.	4-A		N/A	

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NPDES Number PA 0009920

III. OUTFALLS AND ASSOCIATED WASTEWATER TREATMENT TECHNOLOGIES

Outfall Number	Treatment Unit Description (list in sequence)	Treatment Unit Code (see Table 1)	Treatment Unit Design Flow Rate (10⁶ gal/day)	Methods for Handling and Disposal of Solid or Liquid Residue Resulting from Treatment (list in sequence)	Handling and Disposal Code
001	Industrial Waste Filter System - DSN 501: (See NPDES Flow Chart for contributing waste streams).		0.3 Design Maximum		
	- Mixing	1-O		N/A	
	- Pressure Filtration (Filter media added prior to filter)	5-R		Landfill	5-Q
	- Rapid Sand Filtration (Optional)	1-R		N/A	
	- Discharge to Surface Water via DSN 001	4-A		N/A	
001	Secondary Neutralizer Tank - DSN 501: (See NPDES Flow Chart for contributing waste streams).		0.3 Design Maximum		
	- Mixing	1-O		N/A	
	- Neutralization	2-K		N/A	
	- Evaporation/Cooling	1-F		N/A	
	- Discharge to Surface Water via DSN 001	4-A		N/A	

NPDES Number PA 0009920

III. OUTFALLS AND ASSOCIATED WASTEWATER TREATMENT TECHNOLOGIES

Outfall Number	Treatment Unit Description (list in sequence)	Treatment Unit Code (See Table II)	Treatment Unit Design Flow Rate (10^6 gal/day)	Methods for Handling and Disposal of Solid or Liquid Residue Resulting from Treatment (list in sequence)	Handling and Disposal Code
001	Industrial Waste Treatment System - DSN 001:		0.3 Maximum Design		
	(See NPDES Flow Chart for contributing waste streams).				
	- Mixing	1-O		N/A	
	- Neutralization	2-K		N/A	
	- Coagulation	2-D		N/A	
	- Flotation	1-H		N/A	
	- Settling	1-U		N/A	
	- Pressure Filtration (Portable Unit)	5-R		Landfill *	5-Q
	- Discharge to Surface Water via DSN 001	4-A		N/A	
				* Solids disposed of at NRC licensed shallow land burial facilities.	

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0009920

NPDES Number PA

III. OUTFALLS AND ASSOCIATED WASTEWATER TREATMENT TECHNOLOGIES

Outfall Number	Treatment Unit Description (list in sequence)	Treatment Unit Code (see Table 1)	Treatment Unit Design Flow Rate (10^6 gal/day)	Methods for Handling and Disposal of Solid or Liquid Residue Resulting from Treatment (list in sequence)	Hazardous Waste Disposal Code
001	TMI-1 Liquid Radioactive Waste Treatment:		0.04 Design Maximum		
	- Mixing	1-Q		N/A	
	- Neutralization	2-K		N/A	
	- Evaporation	1-F		Landfill - bottoms*	5-Q
	- Ion Exchange	2-J		Landfill - resins*	5-Q
	- Discharge to Surface Water via DSN 001	4-A		N/A	
				*Evaporator bottoms and spent resins are solidified and disposed of as low level radwaste in NRC-licensed shallow land burial facilities.	
002	This outfall is an emergency discharge for effluent from the Unit 2 Mechanical Draft Cooling Towers (MDCT) which would be used in the event that outfall 001 became blocked. Water discharged from outfall 002 would receive the same treatment as water discharged from outfall 001.				
003	This outfall is an emergency discharge for effluent from Unit 1 MDCT which would be used in the event that outfall 001 became blocked. Water discharged from outfall 003 would receive the same treatment as water discharged from outfall 001.				
004	This outfall is an emergency bypass discharge which would be used in the event that the Unit 1 MDCT became blocked and could not be used. Water discharged from outfall 004 would receive the same treatment as water discharged from outfall 001 except for the cooling provided by the Unit 1 MDCT.				
	(NOTE: DSN 002, 003 and 004 may also receive effluent related to Mechanical Draft Cooling Tower Maintenance Activities).				

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NPDES Number PA 0009920

III. OUTFALLS AND ASSOCIATED WASTEWATER TREATMENT TECHNOLOGIES

Outfall Number	Treatment Unit Description (list in sequence)	Treatment Unit Code (See Table 1)	Treatment Unit Design Flow Rate (10^6 gal/day)	Method for Handling and Disposal of Solid or Liquid Residue Resulting from Treatment (list in sequence)	Handling and Disposal Code
005	Stormwater Collection:		10yr-24hr. Storm Event		
	- Settling - Discharge to Surface Water	1-U 4-A		Landfill	5Q
	Dewatering of Natural Draft Cooling Towers:		(Basin design basis unknown, typical flow rates approx. 7 MGD. This is an intermittent discharge, occuring approx. once every 24 months).		
	- Settling - Discharge to Surface Water	1-U 4-A		Landfill	5-Q
	Greenhouse Desilting:		(Intermittent use occurring approx. once every 12 months. Design flow rate unknown. Basin capacity approx 2 million gallons).		
	- Settling - Discharge to Surface Water	1-U 4-A		Landfill	5-Q
	Fire Brigade Training Facility Runoff:		0.1 MGD max. flow (Intermittent use)		
	- Oil and Grease Removal - Settling - Discharge to Surface Water	4-H 1-U 4-A		Incineration Landfill	5-Q 5-Q
	Other Discharges: (See NPDES Flow Chart - Examples include Unit 1 and 2 Air Intake Sumps, Fire Service Water, Unit 2 Admin. Bldg. Computer Room Air Con. Non-Contact Cooling Water, Deminimus Condensate from Plant Steam System Leakage, Waste Module Sump Discharge)			(Intermittent minor flows with no impact upon stormwater settling basin design basis.	
	- Settling - Discharge to Surface Water	1-U 4-A		Landfill	5-Q

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NPDES Number PA 0009920

IV. SOURCES OF WASTEWATER CONTRIBUTING TO OUTFALL NUMBER DSN 001

A. Process Wastewater No. Recirculating Cooling Water System Blowdown

1. Describe process and type of wastewater
Main condenser non-contact recirculating cooling water blowdown from the the site Circulating Water System.

2. Applicable EPA Effluent Limitation Guideline: 40 CFR 423

Category/Subcategory Steam Electric Guidelines/Natural Draft Cooling Tower Blowdown

3. Representative Monthly Production Rate

Quantity	Units of Measure	Of Product (or raw material used)	Month When Maximum Production Occurs
386600	MWe Hr/month	Electricity	Variable

4. Discharge Occurs: 24 hr/day; 7 days/wk; 365 days/yr; 12 months/yr

During which months? All months, except for maintenance outages

Long-Term Average Discharge Rate Approx.6 (units) MGD

Representative Monthly Discharge Rate Approx.6 (units) MGD

Maximum Daily Discharge Rate Approx.9 (units) MGD

Process Wastewater No. Non-contact Service Water Cooling System

1. Describe process and type of wastewater:
Once through non-contact cooling water discharge

2. Applicable EPA Effluent Limitation Guideline: 40 CFR 423

Category/Subcategory Steam Electric Guidelines/Low Volume Waste

3. Representative Monthly Production Rate

Quantity	Units of Measure	Of Product (or raw material used)	Month When Maximum Production Occurs
386600	MWe Hr/month	Electricity	Variable

4. Discharge Occurs: 24 hr/day; 7 days/wk; 365 days/yr; 12 months/yr

During which months? All months

Long-Term Average Discharge Rate Approx.30 (units) MGD

Representative Monthly Discharge Rate Approx.30 (units) MGD

Maximum Daily Discharge Rate Approx.57 (units) MGD

NPDES Number PA 0009920

IV. SOURCES OF WASTEWATER CONTRIBUTING TO OUTFALL NUMBER DSN 001

A Process Wastewater No. 401: Industrial Wastewater Filtration System (IWFS)

1. Describe process and type of wastewater
Discharge from IWFS.System receives wastewater and sludges from water treatment system sumps and drains.

2. Applicable EPA Effluent Limitation Guideline: 40 CFR 423

Category/Subcategory Steam Electric Guidelines/Low Volume Waste

3. Representative Monthly Production Rate

Quantity	Units of Measure	Of Product (or raw material used)	Month When Maximum Production Occurs
386600	Mwe Hr/month	Electricity	Variable

4. Discharge Occurs: 8 to 10 hr/day; 0 to 1 days/wk; 25 days/yr; 12 months/yr

During which months? All months

Long-Term Average Discharge Rate 0.021 (units MGD); Representative Monthly Discharge Rate 0.021 (units MGD)

Maximum Daily Discharge Rate 0.053 (units MGD)

Process Wastewater No. 501: Secondary Neutralizer Tank

1. Describe process and type of wastewater:
Discharge from secondary plant neutralizer tank . Tank receives waste from water treatment system ion exchangers and secondary chemistry laboratory.

2. Applicable EPA Effluent Limitation Guideline: 40 CFR 423

Category/Subcategory Steam Electric Guidelines/Low Volume Waste

3. Representative Monthly Production Rate

Quantity	Units of Measure	Of Product (or raw material used)	Month When Maximum Production Occurs
386600	Mwe Hr/month	Electricity	Variable

4. Discharge Occurs: 1 to 20 hr/day; 1 to 3 days/wk; 73 days/yr; 12 months/yr

During which months? All months

Long-Term Average Discharge Rate 0.047 (units MGD); Representative Monthly Discharge Rate 0.047 (units MGD)

Maximum Daily Discharge Rate 0.091 (units MGD)

NPDES Number PA 0009920

IV. SOURCES OF WASTEWATER CONTRIBUTING TO OUTFALL NUMBER DSN 001

A Process Wastewater No. 701: Industrial Wastewater Treatment System (IWTS)

1 Describe process and type of wastewater
Discharge from IWTS. System receives wastewater from secondary plant sumps and drains.

2 Applicable EPA Effluent Limitation Guideline: 40 CFR 423

Category/Subcategory Steam Electric Guidelines/Low Volume Waste

3 Representative Monthly Production Rate

Quantity	Units of Measure	Of Product or raw material used	Month When Maximum Production Occurs
386600	MWe Hr/month	Electricity	Variable

4 Discharge Occurs: 8 to 24 hr/day; 3 to 5 days/wk; 264 days/yr; 12 months/yr

During which months? All months

Long-Term Average Discharge Rate 0.078 units MGD; Representative Monthly Discharge Rate 0.078 units MGD

Maximum Daily Discharge Rate 0.144 units MGD

Process Wastewater No. NA: Reactor Building Emergency Cooling Water System (RBECWS)

1. Describe process and type of wastewater
Discharge from RBECWS. Actuation of system results in direct discharge to DSN 001.

2. Applicable EPA Effluent Limitation Guideline: 40 CFR 423

Category/Subcategory Steam Electric Guidelines/Low Volume Waste

3. Representative Monthly Production Rate

Quantity	Units of Measure	Of Product or raw material used	Month When Maximum Production Occurs
386600	MWE Hr/Month	Electricity	Variable

4. Discharge Occurs: * hr/day; days/wk; days/yr; months/yr

During which months? N/A: System designed for emergency conditons

Long-Term Average Discharge Rate N/A units N/A; Representative Monthly Discharge Rate N/A units

Maximum Daily Discharge Rate * units

* Refer to the GPUN letters submitted to the PaDER concerning this outfall. These are referenced on page 14 A. The RBECWS is discussed in detail.

End DSN 001 Steam Electric Guideline Process Waste Description

IV. SOURCES OF WASTEWATER CONTRIBUTING TO OUTFALL DSN 001
(Continued from page 14)

GPU Nuclear has provided the PaDER with information describing the RBECWS in the following correspondence which relate to the potential discharge of corrosion inhibitors from TMINS:

1. GPUN Letter No. C331-91-2049, dated July 25, 1991.
2. GPUN Letter No. C330-92-2010, dated September 18, 1991.
3. GPUN Letter No. C330-92-2010, dated October 18, 1991.
4. GPUN Letter No. C330-91-318, dated December 6, 1991.
5. GPUN Letter No. C331-92-2014, dated April 13, 1992.

EPA 3WQ-286.10 (Rev 12/87)

NPDES Number PA 0009920

IV. SOURCES OF WASTEWATER FOR OUTFALL DSN 001

B DSN 101: Sewage Treatment Plant (Reference NPDES Permit PA 0081698 reapplication submitted 7/21/89, GPUN letter No. C311-89-2059)

1. Source(s):
2. Discharge Occurs: 24 hrs/day; 7 days/wk; 365 days/yr; 12 months/yr

During which months? All months

Long-Term Average Discharge Rate 0.016 units MGD; Representative Monthly Discharge Rate 0.016 units MGD

Maximum Daily Discharge Rate 0.031 units MGD

C. TMI-1 Liquid Radioactive Waste Treatment System (NRC regulated discharge)

1. Source(s): Discharge from Rad Waste System. System receives wastewater from primary plant systems.
2. Discharge Occurs: 8 to 12 hrs/day; 0 to 4 days/wk; 146 days/yr; 12 months/yr

During which months? All months

Long-Term Average Discharge Rate 0.003 units MGD; Representative Monthly Discharge Rate 0.003 units MGD

Maximum Daily Discharge Rate 0.014 units MGD

D. Total Process, Miscellaneous Non-Contact Cooling, and Sanitary Wastewater (not stormwater)

1. Source(s): See process listed above for DSN 001. NOTE: Flow averages used here reflect recorded plant flow data for 7/89-6/90.
2. Discharge Occurs: 24 hrs/day; 7 days/wk; 365 days/yr; 12 months/yr

During which months? All months

Long-Term Average Discharge Rate 35.2 units MGD; Representative Monthly Discharge Rate 35.2 units MGD

Maximum Daily Discharge Rate 69.1 units MGD

E. Stormwater Runoff (See instructions) Not applicable

10-yr. 24-hr. Rainfall (inches)		Drainage Area (Size)	(Units)		Conversion Factor		10-Year 24-hr Runoff Volume	(Units)
	X		Ft^2	X	0.623	=		Gallons
	X		Yd^2	X	5.61	=		Gallons
	X		Acres	X	27.1321	=		Gallons

ER-BWQ-288 (0 · Rev 12/87)

NPDES Number PA 0009920

IV. SOURCES OF WASTEWATER CONTRIBUTING TO OUTFALL NUMBER DSN 002, 003 and 004

A. Process Wastewater No Mechanical Draft Cooling Towers Emergency Bypasses

1. Describe process and type of wastewater
See attached narrative in Section III (see page 10).

2. Applicable EPA Effluent Limitation Guideline: 40 CFR 423

Category/Subcategory Steam Electric Guidelines/Combined Discharge

3. Representative Monthly Production Rate

Quantity	Units of Measure	Of Product (or raw material used)	Month When Maximum Production Occurs
386600	MWe Hr/month	Electricity	Variable

4. Discharge Occurs: N/A hr/day; N/A days/wk; N/A days/yr; N/A month/yr

During which months? Maintenance or emergency use only - no previous use history

Long-Term Average Discharge Rate 0 (units) MGD; Representative Monthly Discharge Rate 0 (units) MGD

Maximum Daily Discharge Rate 0 (units) MGD

Process Wastewater No. End DSN 002, 003, and 004 Steam Electric Guideline Process Wastewater Descriptions.

1. Describe process and type of wastewater:

2. Applicable EPA Effluent Limitation Guideline: 40 CFR _____

Category/Subcategory _____

3. Representative Monthly Production Rate

Quantity	Units of Measure	Of Product (or raw material used)	Month When Maximum Production Occurs

4. Discharge Occurs: _____ hr/day; _____ days/wk; _____ days/yr; _____ month/yr

During which months? _____

Long-Term Average Discharge Rate _____ (units) _____; Representative Monthly Discharge Rate _____ (units) _____

Maximum Daily Discharge Rate _____ (units) _____

NPDES Number PA 0009920

IV. SOURCES OF WASTEWATER CONTRIBUTING TO OUTFALL NUMBER DSN 005

A Process Wastewater No. Natural Draft Cooling Tower (NDCTs) Dewatering

1. Describe process and type of wastewater
Discharge from NDCTs Dewatering Basin to Yard Drain System for tower maintenance

2. Applicable EPA Effluent Limitation Guideline: 40 CFR 423

Category/Subcategory Steam Electric Guidelines/Low Volume Waste

3. Representative Monthly Production Rate

Quantity	Units of Measure	Of Product (or raw material used)	Month When Maximum Production Occurs
386600	MWe Hr/month	Electricity	Variable

4. Discharge Occurs: * ___ hr/day; ___ days/wk; ___ days/yr; ___ months/yr

During which months? Required for maintenance purposes (typically once every 24 months)

Long-Term Average Discharge Rate NA (units -)

Representative Monthly Discharge Rate NA (units -)

Maximum Daily Discharge Rate Approx. 7** (units MGD)

* Variable discharge frequency and duration dependent upon maintenance requirements.

** Based upon maximum release of 14 million gallons over two days.

Process Wastewater No. ___ End DSN 005 Steam Electric Guideline Process Wastewater Description:

1. Describe process and type of wastewater:

2. Applicable EPA Effluent Limitation Guideline: 40 CFR ___

Category/Subcategory ___

3. Representative Monthly Production Rate

Quantity	Units of Measure	Of Product (or raw material used)	Month When Maximum Production Occurs

4. Discharge Occurs: ___ hr/day; ___ days/wk; ___ days/yr; ___ months/yr

During which months? ___

Long-Term Average Discharge Rate ___ (units ___)

Representative Monthly Discharge Rate ___ (units ___)

Maximum Daily Discharge Rate ___ (units ___)

NPDES Number PA 0009920

IV. SOURCES OF WASTEWATER FOR OUTFALL DSN 005

B Fire Training Facility Runoff

1. Source(s): Discharge from oil/water separator. Oil/water separator receives runoff from the facility
2. Discharge Occurs: * - hrs/day: - days/wk: - days/yr: 12 months/yr

During which months? All months

Long-Term Average Discharge Rate N/A units -

Maximum Daily Discharge Rate N/A units -

Representative Monthly Discharge Rate N/A units -

* Flow depends upon rain events and frequency of training
N/A - not available

C. Intake Structure Desilting

1. Source(s): Discharge from Desilting Basin to Yard Drain System.
2. Discharge Occurs: * - hrs/day: - days/wk: - days/yr: - months/yr

During which months? * Required for maintenance purposes

Long-Term Average Discharge Rate N/A units -

Maximum Daily Discharge Rate N/A units -

Representative Monthly Discharge Rate N/A units -

* Typically once per year. Duration period variable, 2 to 4 weeks.
N/A - not available

D. Total Process, Miscellaneous Non-Contact Cooling, and Sanitary Wastewater (not stormwater)

1. Source(s): See processes listed above for DSN 005
2. Discharge Occurs: * - hrs/day: - days/wk: - days/yr: - months/yr

During which months? Variable. Dependent upon maintenance, training activities and rainfall.

Long-Term Average Discharge Rate ** Approx. 0.6 units MGD

Maximum Daily Discharge Rate ** Approx. 1 units MGD

Representative Monthly Discharge Rate Approx. 0.6 units MGD

* Variable discharge frequency and duration.

** Total values based upon actual monitoring data 7/89 - 6/90

E. Stormwater Runoff (See instructions) See Page 20 for entire site

10-yr. 24-hr. Rainfall (inches)		Drainage Area Size	Units		Conversion Factor		10-Year 24-hr Runoff Volume	Units
	X		Ft²	X	0.623	=		Gallons
	X		Yd³	X	3.81	=		Gallons
	X		Acres	X	27.1521	=		Gallons

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IV. SOURCES OF WASTEWATER CONTRIBUTING TO OUTFALL NUMBER N/A

A. Process Wastewater ~~No.~~ Intake Structure De-icing

1. Describe process and type of wastewater
Heated Circulating System Water or Nuclear Service Water used to prevent ice formation in the Intake Structure.

2. Applicable EPA Effluent Limitation Guideline: 40 CFR 423

Category/Subcategory Steam Electric Guidelines

3. Representative Monthly Production Rate

Quantity	Units of Measure	Of Product or raw material used)	Month When Maximum Production Occurs
386600	Mwe Hr/month	Electricity	Variable

4. Discharge Occurs: *During river icing conditions only; see attached narrative, page 2
____ hr/day; ____ days/wk; ____ days/yr; ____ months/yr

During which months? Winter months only

Long-Term Average Discharge Rate N/A (units -); Representative Monthly Discharge Rate N/A (units -)

Maximum Daily Discharge Rate N/A (units -)

N/A - not available

Process Wastewater ~~No.~~ Natural Draft Cooling Tower (NDCTs) Dewatering

1. Describe process and type of wastewater
Blowdown from NDCTs to Intake Structure for tower maintenance. Process involves lowering water level within basins.

2. Applicable EPA Effluent Limitation Guideline: 40 CFR 423

Category/Subcategory Steam Electric Guidelines/NDCT Blowdown

3. Representative Monthly Production Rate

Quantity	Units of Measure	Of Product or raw material used)	Month When Maximum Production Occurs
386600	Mwe Hr/month	Electricity	Variable

4. Discharge Occurs: * - hr/day; - days/wk; - days/yr; - months/yr

During which months? Required for maintenance (typically every 24 months)

Long-Term Average Discharge Rate N/A (units -); Representative Monthly Discharge Rate N/A (units -)

Maximum Daily Discharge Rate approx. 0.5 MGD (units ____)

* Variable frequency and duration dependent upon maintenance requirements

** Based upon approx. release of 1 million gallons over two days.

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IV. SOURCES OF WASTEWATER FOR OUTFALL N/A

B TMI-1 Screen Intake Structure Screen Wash Water Discharge to River

1. Source(s): Screen Wash Water and River Water Chlorination House Floor Drain

2. Discharge Occurs: * hrs/day; 7 days/wk; 365 days/yr; 12 months/yr

During which months? All Months

Long-Term Average Discharge Rate 0.045 (units MGD); Representative Monthly Discharge Rate 0.045 (units MGD)

Maximum Daily Discharge Rate ** (units)

C. TMI-2 Screen Intake Structure Screen Wash Water Discharge to River

1. Source(s): Screen Wash Water

2. Discharge Occurs: *** hrs/day; 7 days/wk; 365 days/yr; 12 months/yr

During which months? All Months

Long-Term Average Discharge Rate 0.008 (units MGD); Representative Monthly Discharge Rate 0.008 (units MGD)

Maximum Daily Discharge Rate ** (units)

D. Total Process, Miscellaneous Non-Contact Cooling, and Sanitary Wastewater (not stormwater)

1. Source(s):

2. Discharge Occurs: _____ hrs/day; _____ days/wk; _____ days/yr; _____ months/yr

During which months? _____

Long-Term Average Discharge Rate _____ (units _____); Representative Monthly Discharge Rate _____ (units _____)

Maximum Daily Discharge Rate _____ (units _____)

E. Stormwater Runoff (See instructions)

10-yr, 24-hr. Rainfall (inches)		Drainage Area Size	Units		Conversion Factor		10-Year 24-hr Runoff Volume	Units
_____	X	_____	Ft^2	X	0.623	=		Gallons
_____	X	_____	Yd^2	X	5.61	=		Gallons
_____	X	_____	Acres	X	27,1521	=		Gallons

NOTE: Information items marked with an asterisk (*) is on Page 19B.

IV. SOURCES OF WASTEWATER FOR OUTFALL

* Wash water actuated approximately every 4 hours for 5 minute duration. Also, actuated by delta pressure. Approximate flow rate 1500 gpm.

** Data not available - flow increases when needed based on river conditions.

*** Wash water actuated approximately every 8 hours for 5 minute duration. Approximate flow rate 570 gpm.

IV. E. TYPE I STORMWATER RUNOFF OUTFALLS (SWRO)

DRAINAGE AREA	10yr., 24 hr. RAINFALL (Inches)		DRAINAGE AREA SIZE (Acres)		CONVERSION FACTOR		10 Year 24 hr. RUNOFF (Gallons)
DSN 005	4.8	X	115.5	X	27,152	=	15.05 E6
SWRO - 1	4.8	X	16.6	X	27,152	=	2.15 E6
SWRO - 2	4.8	X	11.9	X	27,152	=	1.55 E6
SWRO - 3	4.8	X	21.5	X	27,152	=	2.80 E6
SWRO - 4	4.8	X	0.7	X	27,152	=	.09 E6
		X		X		=	
Total site	4.8	X	166.1	X	27.152	=	21.65 E6

IV. A STATION INTAKE DEICING (Continued from Page 19)

NOTE: During periods of ice accumulation on the Susquehanna River and in the station Intake Structure, or when river water temperature approaches 32°F, a stream of warm Circulating System water or Nuclear Service System water is diverted to the Intake Structure to provide Intake Structure deicing. Deicing water flow is regulated to ensure that an administrative average temperature of 35°F, as normally measured at the Intake Structure wing wall, will be maintained in order to minimize thermal discharge. In the event the wing wall temperature sensor becomes inoperable, temperature will be measured either within the Intake Bay or by using the temperature sensor located in the Nuclear River Water piping system upstream of the heat exchanger.

INSTRUCTIONS FOR COMPLETING FORM

V. ANALYSIS OF EFFLUENT QUALITY (General Instructions, continued)

New Dischargers

New dischargers that have effluent data available should follow the standard directions on page 9 a for existing dischargers. New dischargers that do not have an effluent to sample and analyze should review the instructions on page 9 a and estimate and report the data for the parameters of the appropriate Groups (A-E) for each proposed outfall. Base these estimates on your knowledge of the proposed facility's raw materials, maintenance chemicals, intermediate and final products, byproducts, and any analyses of your expected effluent or of any similar effluent. You may also provide such determinations and estimates based on available in-house or contractor's engineering reports, pilot plant studies, or any other studies performed on the proposed facility. Any available data from representative analyses should be reported as applicable.

New dischargers should also indicate the basis for the information reported on Question V for the proposed outfalls. Indicate the basis using the following notations:

1. Actual data from pilot plant.
2. Estimates from other engineering studies.
3. Data from other similar plants.
4. Best professional estimates.
5. Other - specify on the form or by attached sheet.

****** ALL DISCHARGERS SUBMIT THIS TABLE WITH YOUR APPLICATION ******

Outfall Number	Discharge Contains (see descriptions on page 9 a)					Pollutants or Pollutant Groupings which must be Sampled for and Analyzed	Required No. of Sample Events (see Pg. 9 a)
	Process Waste (1)	NCCW (2)	Sanitary Waste (3)	Type I SWRO (4)	Misc. Waste (5)		
003				X		2C, 3C, 4C, 5C, 7C, 17M, 22M	1
001	X	X	X	N/A	X	see attached	3
005	N/A	X	N/A	X	X	see attached	1
002							
003		Similiar	to 001 -	Emergency	Use Only		0
004							
SWRO-1	N/A	N/A	N/A	X	N/A	see attached	1
SWRO-2	N/A	N/A	N/A	X	N/A	see attached	1
SWRO-3	N/A	N/A	N/A	X	N/A	see attached	1
SWRO-4	N/A	N/A	N/A	X	N/A	see attached	1
Intake	sampling	results	also included				

****** SUBMIT THIS TABLE WITH YOUR APPLICATION ******

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

[X] Outfall Number DSN 001 [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [ ] New Discharge (describe basis for information presented, see page 9 instructions for Question V)

	1. POLLUTANT GROUP A	2. LEVEL PRESENT						3. UNITS	
		a. Maximum Daily Value*		b. Maximum 30 Day Value (if available)**		c. Long Term Avgs. Value (if available)***		d. No of Analyses	a. Concentration	b. Mass
		(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		
01	Biochemical Oxygen Demand, BOD	6.1		5.2		----		3	mg/l	
21	Chemical Oxygen Demand, COD	21		14		---		3	mg/l	
31	Total Organic Carbon, TOC	5.9		5.0		----		3	mg/l	
01	Total Suspended Solids, TSS	244		88		44.6		48	mg/l	
51	Total Dissolved Solids, TDS	177		174		----		3	mg/l	
03	Ammonia as N	0.3		0.2		----		3	mg/l	
71	Oil and Grease	2		2		< 1		48	mg/l	
00	Bromide	< 0.1		< 0.1		----		3	mg/l	
50	Chlorine, Total Residual	0.65		<0.01		< 0.01		196	mg/l	
10	Temperature winter 10/1-3/31	22°C	Value	16°C	Value	8°C	Value	Cont	°C	°C
11	Temperature summer 4/1 - 9/30	31°C	Value	26°C	Value	22°C	Value	Cont	°C	°C
12	pH	7.12 Minimum	8.47 Maximum	XXXX	XXXX	XXXX	C	48	standard units	standard units

* Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a minimum of four grab samples taken over the operating hours of the facility during a 24 hour period.

** Maximum 30 Day Value: Determine the average of all daily values taken during each calendar month and report the highest average.

*** Long Term Average Value: If you measure more than one daily value for a pollutant, determine the average of all values within the last year and report both the mass and concentration.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

(X) Outfall Number DSN 001 ( ) Intake (Sample capacity location of sample)

( ) Existing Discharge ( ) New Discharge (Describe basis for information presented, see page 9 b Instructions for Question V)

	POLLUTANT GROUP B	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present a. Maximum Daily Value		b. Average of Analyses		c. Number of Analyses	4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate blank or describe another reason						
					Concentration (or other)	Mass	Concentration (or other)	Mass		Concentration (or other)	Mass	Raw Material	Intermediate	Final	Cooling Water Additive	By-Product	Intake Water	Other (Explain)
1M	Color		1 CU	110.2	30		27		3	CU							X	
1M	Fecal Coliform***		Colony/100 ml	909.6	300		163		3	Col./100 ml							X	
1M	Fluoride*	100	200	340.2	<200		<200		3	ug/l								
1M	Nitrate-Nitrite (as N)		500	353.2	2100		2000		3	ug/l							X	
1M	Nitrogen, Total Organic (as N) **		NH_3=500 TKN=100	351.2 350.2	1000		866		3	ug/l							X	Sewage, Plant Chemicals
1M	Phosphorus (as P), Total		10	365.3	260		200		3	ug/l							X	Detergent Use
1M	Sulfate (as SO_4)	1,000	100	300	>2700		>3000		3	ug/l							X	H_2SO_4 Addtl
1M	Sulfide (as S)	1,000	100	376.1	<100		<100		3	ug/l								
1M	Sulfite (as SO_3)	2,000	2000	377.1	<2000		<2000		3	ug/l								
1M	Surfactants (MBAS)	25	20	425.1	40		30		3	ug/l							X	Detergent use

3.a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a minimum of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

*Note: System Laboratory used standard curve with 0.2 mg/l as lowest calibration point

** TON= NH_3 + TKN.

*** Tested per Standard Methods for the Examination of Water and Wastewater

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

☒ Outfall Number DSN 001 ☐ Intake Sample (specify location of sample)

☐ Existing Discharge ☐ New Discharge (does the basis for information presented, see page 8 b Instructions for Question V)

	POLLUTANT GROUP B (continued)	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	a. Max Daily Value: Mass	b. Average of Analyses: Concentration	b. Average of Analyses: Mass	c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Raw Material	Manufactured	Solvent	Intermediate Product	By Product	Intake Water	Other (Explain)
1M	Antimony, Total	300	1	204.2	< 1		< 1		3	ug/l								MDCT
2M	Arsenic, Total	50	0.1	206.2	2		2		3	ug/l							X	Treated Wood
3M	Beryllium, Total,	5	0.2	210.1	<0.2		<0.2		3	ug/l								
4M	Cadmium, Total	5	0.1	213.2	0.2		<0.2		3	ug/l							X	
5M	Chromium, Total	50	10	200.7	<10		<10		3	ug/l								
6M	Chromium, Hexavalent	10	10	218.4	<10		<10		3	ug/l								
7M	Copper, Total	20	10	200.7	10		<10		3	ug/l							X	Piping
8M	Lead, Total	100	1	239.2	4		3		3	ug/l							X	
9M	Mercury, Total	0.2	0.2	245.1	<0.2		<0.2		3	ug/l								
10M	Nickel, Total	60	1	249.2	12		9		3	ug/l							X	
11M	Selenium, Total	75	2	270.2	< 2		< 2		3	ug/l								
12M	Silver, Total	10	10	200.7	< 10		< 10		3	ug/l								
13M	Thallium, Total	100	1	279.2	< 1		< 1		3	ug/l								
14M	Zinc, Total	5	10	200.7	90		60		3	ug/l							X	
15M	Cyanide, Total	20	5	sw -846 -9012	< 5		-		1	ug/l								
16M	Cyanide, Free	5	5	335.2	26*		-		1	ug/l								

3.a Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

* Note: Higher level noted, lab report states due to analysis interferance.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009970

Outfall Number: USN 001

[ ] Intake (Sample upstream of intake)

[ ] Existing Discharge

[ ] New Discharge (See the basis for information presented, see page V-1 Instructions for Question V)

	POLLUTANT GROUP B (continued)	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	a. Max Daily Value: Mass	b. Average of Analyses: Concentration	b. Average of Analyses: Mass	c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate box or describe another reason: Base Materials	Waste Treatment	Solvent	Intake (multiple Processes)	By Products	Intake Water	Other Explain
1M	Phenols, Total	5	5	SW-846 9066	<5.0		–		1	ug/l								
1M	Aluminum, Total	100	100	200.7	1100		800		3	ug/l							X	AlCl3 addition
1M	Barium, Total	100	10	200.7	40.0		40.0		3	ug/l							X	
1M	Boron, Total *	100	100	200.7	8800		<100		4	ug/l								H3BO3 addition
1M	Cobalt, Total	50	0.1	219.2	5		4		3	ug/l							X	
1M	Iron, Total	30	10	200.7	1890		1600		3	ug/l							X	Piping
1M	Iron, Dissolved	30	10	200.7	70		60		3	ug/l							X	Piping
1M	Magnesium, Total	30	100	200.7	7000		5600		3	ug/l							X	
1M	Molybdenum, Total	100	1	246.2	1		<1		3	ug/l							X	
1M	Manganese, Total	15	10	200.7	222		173		3	ug/l							X	
1M	Tin, Total	200	1	282.2	<1		<1		3	ug/l								
1M	Titanium, Total	600	1	283.2	6		5		3	ug/l							X	

3.a Maximum Daily Value: Report the highest daily value from the last year of data. For composite sampling, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

* Note: 8800 ug/l Boron analysis result of grab sample taken during a non-routine plant evolution. Boron concentrations during routine evolutions are typically less than detectable. See discussion in Section VI of this application.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

☒ Outfall Number: DSN 001 ☐ Intake (Sample type only for outfall number)

☐ Existing Discharge ☐ New Discharge (See the back for information presented, see page 8 for instructions for Question V)

	POLLUTANT GROUP C-1 Volatile Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value		b. Average of Analyses		c. Number of Analyses	4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason. Raw Material	Manufactured	Waste	Intermediate Product	By Product	Intake Water	Other (Explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
1V	Acrolein	10	100 and 5	624	< 100		< 5		3	ug/l								
2V	Acrylonitrile	10	100 and 5	624	< 100		< 5		3	ug/l								
3V	Benzene	10	5	624	< 5		< 5		3	ug/l								
5V	Bromoform	10	2 and 5	624	< 5		< 5		3	ug/l								
6V	Carbon Tetrachloride	10	5	624	< 5		< 2		3	ug/l								
7V	Chlorobenzene	10	5	624	< 5		< 5		3	ug/l								
8V	Chlorodibromomethane	10	5	624	< 5		< 5		3	ug/l								
9V	Chloroethane	10	10	624	< 10		< 10		3	ug/l								
10V	2-Chloroethylvinyl Ether	10	10	624	< 10		< 10		3	ug/l								
11V	Chloroform	10	5	624	< 5		< 5		3	ug/l								
12V	Dichlorobromomethane	10	5	624	< 5		< 5		3	ug/l								
14V	1,1-Dichloroethane	10	5	624	< 5		< 5		3	ug/l								
15V	1,2-Dichloroethane	10	5	624	< 5		< 5		3	ug/l								
16V	1,1-Dichloroethylene	10	5	624	< 5		< 5		3	ug/l								
17V	1,2-Dichloropropane	10	5	624	< 5		< 5		3	ug/l								
18V	1,3-Dichloropropylene	10	5	624	< 5		< 5		3	ug/l								
19V	Ethylbenzene	10	5	624	< 5		< 5		3	ug/l								

* Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

* Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS fraction pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

☒ Outfall Number: DSN 001 ☐ Intake (Sample (specify location of sample)

☐ Existing Discharge ☐ New Discharge (describe the basis for information presented, see page 9 Instructions for Question V)

	POLLUTANT GROUP C-1 Volatile Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max. Daily Value: Concentration	3. Level Present a. Max. Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate box or describe another reason: Raw Materials Used	Maybe Manufactured	Intermediate	Intermediate Product	By Product	Intake Water	Other Sources
20V	Methyl Bromide	10	10	624	<10		<10		3	ug/l								
21V	Methyl Chloride	10	10	624	<10		<10		3	ug/l								
22V	Methylene Chloride	10	5	624	<10		<10		3	ug/l								
23V	1,1,2,2 Tetrachloroethane	10	5	624	< 5		< 5		3	ug/l								
24V	Tetrachloroethylene	10	5	624	< 5		< 5		3	ug/l								
25V	Toluene	10	5	624	< 5		< 5		3	ug/l								
26V	1,2 Trans Dichloroethylene	10	5	624	< 5		< 5		3	ug/l								
27V	1,1,1 Trichloroethane	10	5	624	< 5		< 5		3	ug/l								
28V	1,1,2 Trichloroethane	10	5	624	< 5		< 5		3	ug/l								
29V	Trichloroethylene	10	5	624	< 5		< 5		3	ug/l								
31V	Vinyl Chloride	10	10	624	<10		<10		3	ug/l								

* Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

* Average of Analyses: Determine the average of all samples taken within the past year and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 peak pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

☒ Outfall Number DSN 001 ☐ Intake Sample (specify location of sample)

☐ Existing Discharge ☐ New Discharge (describe basis for information presented, see page 9 b Instructions for Question V)

	POLLUTANT GROUP C-2 Acid-Fraction Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. KPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses			New Material	Mass factored	Stored	Intermediate Product	By Product	Intake Water	Other (Explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
1A	2 Chlorophenol	10	10	625	<10		<10		3	ug/l								
2A	2,4 Dichlorophenol	10	10	625	<10		<10		3	ug/l								
3A	2,4 Dimethylphenol	10	10	625	<10		<10		3	ug/l								
4A	4,6 Dinitro o Cresol *	10	25	625	<25		<25		3	ug/l								
5A	2,4 Dinitrophenol	50	25	625	<25		<25		3	ug/l								
6A	2 Nitrophenol	10	10	625	<10		<10		3	ug/l								
7A	4 Nitrophenol	50	25	625	<25		<25		3	ug/l								
8A	P Chloro m Cresol	10	10	625	<25		<25		3	ug/l								
9A	Pentachlorophenol	50	25	625	<25		<25		3	ug/l								
10A	Phenol	10	10	625	<25		<25		3	ug/l								
11A	2,4,6 Trichlorophenol	10	10	625	<25		<25		3	ug/l								

3.a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS 5 peak pollutants.

*Note: Lower limit of detection used was 25 ug/l

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[X] Outfall Number DSN 001 [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [ ] New Discharge (describe basis for information presented, see page 9 b Instructions for Question V)

	POLLUTANT (GROUP C-3 Base-Neutral Fraction Organics**)	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	a. Max Daily Value: Mass	b. Average of Analyses: Concentration	b. Average of Analyses: Mass	c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or blocks and the smallest reasons						
1M	Acenaphthene	10	10	625	< 10		< 10		3	ug/l								
2M	Acenaphthylene	10	10	625	< 10		< 10		3	ug/l								
3M	Anthracene	10	10	625	< 10		< 10		3	ug/l								
4M	Benzidine	50	25	625	< 25		< 25		3	ug/l								
5M	Benzo (a) Anthracene	10	10	625	< 10		< 10		3	ug/l								
6M	Benzo (a) Pyrene	10	10	625	< 10		< 10		3	ug/l								
7M	3,4 Benzo fluoranthene	10	10	625	< 10		< 10		3	ug/l								
8M	Benzo (ghi) Perylene	10	10	625	< 10		< 10		3	ug/l								
9M	Benzo (k) Fluoranthene	10	10	625	< 10		< 10		3	ug/l								
10M	Bis (2 Chloro-ethoxy) Methane	10	10	625	< 10		< 10		3	ug/l								
11M	Bis (2 Chloro-ethyl) Ether	10	10	625	< 10		< 10		3	ug/l								
12M	Bis (2 Chloro-isopropyl) Ether	10	10	625	< 10		< 10		3	ug/l								
13M	Bis (2-Ethylhexyl) Phthalate	10	10	625	< 10		< 10		3	ug/l								
14M	4 Bromophenyl Phenyl Ether	10	10	625	< 10		< 10		3	ug/l								

a. Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

b. Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to 114/HSL pesticide pollutants.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

☒ Outfall Number DSN 001 ☐ Intake (Sample type specify location of sample)

☐ Existing Discharge ☐ New Discharge (describe basis for information presented, see page 9 b Instructions for Question V)

	POLLUTANT GROUP C-3 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value Concentration or Mass	b. Average of Analyses Concentration or Mass	Number of Analyses	4. Units Concentration or Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason. Know Not Detected	Know Not Quantified	Believed	Believed Present	Believed Absent	Other (Explain)
15B	Butyl Benzyl Phthalate	10	10	625	< 10	<10	3	ug/l						
16B	2 Chloronaphthalene	10	10	625	< 10	<10	3	ug/l						
17B	4 Chlorophenyl Phenyl Ether	10	10	625	< 10	<10	3	ug/l						
18B	Chrysene	10	10	625	< 10	<10	3	ug/l						
19B	Dibenzo(a,h) Anthracene	10	10	625	< 10	< 10	3	ug/l						
20B	1,2 Dichlorobenzene	10	10	625	< 10	< 10	3	ug/l						
21B	1,3 Dichlorobenzene	10	10	625	< 10	< 10	3	ug/l						
22B	1,4 Dichlorobenzene	10	10	625	< 10	< 10	3	ug/l						
23B	3,3' Dichlorobenzidine	50	25	625	< 25	< 25	3	ug/l						
24B	Diethyl Phthalate	20	10	625	< 10	<10	3	ug/l						
25B	Dimethyl Phthalate	20	10	625	< 10	< 10	3	ug/l						
26B	Di N Butyl Phthalate	20	10	625	< 10	< 10	3	ug/l						
27B	2,4 Dinitrotoluene	10	10	625	< 10	<10	3	ug/l						
28B	2,6 Dinitrotoluene	10	10	625	< 10	<10	3	ug/l						
29B	Di N Octyl Phthalate	20	10	625	< 10	< 10	3	ug/l						
30B	1,2 Diphenylhydrazine (as Azobenzene)	10	10	625	< 10	<10	3	ug/l						

* a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 peak pollutants

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

☒ Outfall Number DSN 001 ☐ Intake (Sample (specify location of sample)

☐ Existing Discharge ☐ New Discharge (check the boxes for information presented, see page 9 b Instructions for Question V)

	POLLUTANT GROUP C-S Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to suspect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses			Raw Material	Major Intermediate	Final Product	Taken on Site Product	By Product	Intake Water	Other (Explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
2BB	Phenanthrene	10	10	625	< 10		< 10		3	ug/l								
2FB	Pyrene	10	10	625	< 10		< 10		3	ug/l								
2JB	Hexachlorobenzene	10	10	625	< 10		< 10		3	ug/l								
2MB	Hexachlorobutadiene	10	10	625	< 10		< 10		3	ug/l								
2SB	Hexachloro-cyclopentadiene	10	10	625	< 10		< 10		3	ug/l								
2WB	Hexachloroethane	10	10	625	< 10		< 10		3	ug/l								
2YB	Indeno (1,2,3-cd) Pyrene	10	10	625	< 10		< 10		3	ug/l								
3BB	Isophorone	10	10	625	< 10		< 10		3	ug/l								
3DB	Naphthalene	10	10	625	< 10		< 10		3	ug/l								
3HB	Nitrobenzene	10	10	625	< 10		< 10		3	ug/l								
3JB	N-Nitrosodi-methylamine	20	10	625	< 10		< 10		3	ug/l								
3LB	N-Nitrosodi-N-Propylamine	20	10	625	< 10		< 10		3	ug/l								
3NB	N-Nitrosodi-phenylamine	20	10	625	< 10		< 10		3	ug/l								
3QB	Phenanthrene	10	10	625	< 10		< 10		3	ug/l								
3SB	Pyrene	10	10	625	< 10		< 10		3	ug/l								
3UB	1,2,4-Trichlorobenzene	10	10	625	< 10		< 10		3	ug/l								

3.a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 3 peak pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

[X] Outfall Number: DSN 001 [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [ ] New Discharge (describe basis for information presented, see page 9 b Instructions for Question V)

NOT REQUIRED

	POLLUTANT GROUP C-4 Pesticides**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max. Daily Value: Concentration	3. Level Present a. Max. Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Raw Material	Mass Factored	Solvent	Other Modified Product	By Product	Intake Water	Other (Explain)
15*	Aldrin	16																
29*	Alpha BHC	16																
30*	Beta BHC	16																
43*	Gamma BHC	16																
58*	Delta BHC	16																
67*	Chlordane	16																
8*	4,4' DDT	16																
88*	4,4' DDE	16																
96*	4,4' DDD	19																
106*	Dieldrin	16																
111*	Alpha Endosulfan	16																
112*	Beta Endosulfan	16																
120*	Endosulfan Sulfate	16																
140*	Endrin	16																
150*	Endrin Aldehyde	19																
164*	Heptachlor	16																
178*	Heptachlor Epoxide	19																
258*	Toxaphene	16																
268*	1048 KEK:* 2,3,7,8 Tetrachlorodibenzo-P Dioxin																	

3.a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses: Determine the average of all samples taken within the past year and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 peak pollutants.

* Analysis for Dioxin is not required unless your response to Question VI B indicates a need to conduct testing.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

☒ Outfall Number DSN 001 ☐ Intake (Sample (specify location of sample)

☐ Existing Discharge ☐ New Discharge (describe basis for information presented, see page 9 b Instructions for Question V)

	POLLUTANT GROUP D PCB's**	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses			Raw Material	Materia Processed	Waste	Other (specify) Product	By Product	Intake Water	Other (explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
188*	PCB 1242	20	1	608	< 1		< 1		3	ug/l								
189*	PCB 1254	20	1	608	< 1		< 1		3	ug/l								
190*	PCB 1221	20	1	608	< 1		< 1		3	ug/l								
191*	PCB 1232	20	1	608	< 1		< 1		3	ug/l								
192*	PCB 1248	20	1	608	< 1		< 1		3	ug/l								
193*	PCB 1260	20	1	608	< 1		< 1		3	ug/l								
194*	PCB 1016	20	1	608	< 1		< 1		3	ug/l								

3 a Maximum Daily Value - Report the highest daily value from the test year of data. For composite sampling, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab sampling, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3 b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

** New Instructions for Question VI with regard to GC/MS fraction pollutants.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

[X] Outfall Number DSN 001 [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [ ] New Discharge (describe basis for information presented, see page 8 Instructions for Question V)

	POLLUTANT GROUP E Radioactivity	Minimum Acceptable Detection Level (ppb) (pCi/l)	1. Detection Level Used (ppb) (pCi/l)	2. EPA Method Number Used	3. Level Present a. Max. Daily Value: Concentration	a. Max. Daily Value: Mass	b. Average of Analyses: Concentration	b. Average of Analyses: Mass	c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason. Raw Material	Mass Balance	Effluent	Intake modified Treatment	By Product	Intake Water	Other (explain)
1E	Radioactivity: (1) Alpha, Total	Not Available	1 EO, 2 EO	***	< 2 EO		<1.7 EO		3	pCi/l								
2E	(2) Beta, Total	-	1 EO, 9E-1	***	5.8+ EO	1.1	5.8+ EO	1.1	3	pCi/l						X	**	
3E	(3) Radium, Total	-	5E-1, 9E-1	900.1	< 9 E-1		< 6 E-1		3	pCi/l								
4E	(4) Radium 226, Total	-	6E-1, 8E-1	***	< 8 E-1		< 7 E-1		3	pCi/l								

3a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3b Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

*Note: Average of analyses concentrations based on arithmetic means.

** NRC regulated discharges from plant.

*** Radiological analyses by proportional counter method. Analyses conducted in accordance with contractor laboratory (Teledyne Isotopes) procedures. Laboratory participates in US EPA Interlaboratory Cross Comparison Program.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

Outfall Number: 005

[ ] Intake (Sample taken only for pollutant)

[ ] Existing Discharge

[ ] New Discharge (See the back for information presented, see page 9 b Instructions for Question V)

Industrial Wastewater - Natural Draft Cooling Tower Dewatering and Screen Intake Structure Desilting Wastewater Analyses

	1. POLLUTANT (CHEMICAL)	2. EFFLUENT							3. UNITS	
		a. Maximum Daily Value*		b. Maximum 30 Day Value (if available)**		c. Long Term Avgs. Value (if available)***		d. No. of Analyses	a. Concentration	b. Mass
		(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass			
01	Biochemical Oxygen Demand, (BOD)	----		----		----		----	----	
02	Chemical Oxygen Demand, (COD)	----		----		----		----	----	
03	Total Organic Carbon, (TOC)	----		----		----		----	----	
04	Total Suspended Solids, (TSS) ****	31		21		12		12	mg/l	
05	Total Dissolved Solids, (TDS)	----		----		----		----	----	
06	Ammonia as N	----		----		----		----	----	
07	Oil and Grease ****	2		1		< 1		12	mg/l	
08	Phenols	----		----		----		----	----	
09	Chlorine, Total Residual	----		----		----		----	----	
10a	Temperature (winter)	Ambient	Value	Ambient	Value	Ambient	Value	----	°F	°F
10b	Temperature (summer)	Ambient	Value	Ambient	Value	Ambient	Value	----	°F	°F
11	pH ****	7.40	8.82					12	standard units	standard units

* Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentrations found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

** Maximum 30 Day Value: Determine the average of all daily values taken during each calendar month and report the highest average.

*** Long Term Average Value: If you are asked more than one daily value for a pollutant, determine the average of all values within the last year and report both the mass and concentration.

**** Note: Analyses based on 2-hr. replicate grab samples per current permit requirement. These data are based upon historical DMR information - no industrial related discharges occurring during reapplication sampling period.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

Outfall Number 005

( ) Intake (Specify the nature of sample)

( ) Existing Discharge

( ) New Discharge (Use the basis for information presented, see page 8 b instructions for Question V)

Stormwater Runoff Analyses

	1. POLLUTANT GROUP A	2. LEVEL PRESENT							3. UNITS	
		a. Maximum Daily Value*		b. Maximum 30 Day Value (if available)**		c. Long Term Avgs. Value (if available)***		d. No. of Analyses	a. Concentration	b. Mass
		a. Concentration	b. Mass	a. Concentration	b. Mass	a. Concentration	b. Mass			
04	Biochemical Oxygen Demand, BOD	1.3		---		---		1	mg/l	
05	Chemical Oxygen Demand, COD	9		---		---		1	mg/l	
22	Total Organic Carbon, TOC	1.5		---		---		1	mg/l	
45	Total Suspended Solids, TSS ****	162		107		50		29	mg/l	
84	Total Dissolved Solids, TDS	57		---		---		1	mg/l	
61	Ammonia as N	< 0.5		---		---		1	mg/l	
36	Oil and Grease ****	2		1		< 1		26	mg/l	
07	Bromide	< 0.1		---		---		1	mg/l	
09	Chlorine, Total Residual	< 0.01		---		---		1	mg/l	
10B	Temperature (winter)	Ambient	Value	Ambient	Value	Ambient	Value	---	°C	°C
10C	Temperature (summer)	Ambient	Value	Ambient	Value	Ambient	Value	---	°C	°C
12B	pH ****	7.09 Minimum	8.72 Maximum					28	standard units	standard units

* Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab sampling, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

** Maximum 30 Day Value: Determine the average of all daily values taken during each calendar month and report the highest average.

*** Long Term Average Value: If you are given more than one daily value for a pollutant, determine the average of all values within the last year and report both the mass and concentration.

**** Note: Analyses based on 2-hr. replicate grab samples per current permit.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[X] Outfall Number 005

[ ] Intake Sample (specify location of sample)

[ ] Existing Discharge

[ ] New Discharge (Describe the basis for information presented, see page 9 b Instructions for Question V)

	POLLUTANT GROUPS	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	3. Level Present a. Max Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Raw Material	Manufacturing Product	Byproduct	Treatment Product	By-Product	Intake Water	Other (explain)
1M	Color		1 CU	110.2	20				1	CU							X	
2M	Fecal Coliform *		1 colony/100 ml	909.6	2440				1	col./ml							X	Runoff
3M	Fluoride	100	----	----	--				---	---								
4M	Nitrate-Nitrite (as N)		500	353.2	<500				1	ug/l							X	Runoff
5M	Nitrogen, Total Organic (as N) **		NH$_3$=500 TKN =100	351.2 350.2	300				1	ug/l								
6M	Phosphorus (as P), Total		10	365.3	320				1	ug/l							X	Runoff
7M	Sulfate (as SO_4)	1,000	100	300	8090				1	ug/l							X	Add H_2SO_4 to Cl+ Water
8M	Sulfide (as S)	1,000	100	376.1	<100				1	ug/l								
9M	Sulfite (as SO_3)	2,000	2000	377.1	<2000				1	ug/l								
10M	Surfactants (MBAS)	25	20	425.1	30				1	ug/l							X	Runoff

5a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

5b Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

* Tested per Standard Methods for the Examination of Water and Wastewater.

** TON = NH_3 + TKN.

0009920

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA

[X] Outfall Number 005 [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [ ] New Discharge (check the basis for information presented, see page 9 b instructions for Question V)

	POLLUTANT GROUP B (continued)	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value Concentration or others	a. Max Daily Value Mass	b. Average of Analyses Concentration or others	b. Average of Analyses Mass	c. Number of Analyses	4. Units Concentration or others	4. Units Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Base Materials	Materials Processed	Solvents	Other Chemicals, Products	By Products	Intake Water	Other Explanation
1M	Antimony, Total	200	----	----	--				--	--								
2M	Arsenic, Total	50	0.1	206.2	2				1	ug/l							X	NDCT wood
3M	Beryllium, Total,	5	0.2	210.1	<0.2				1	ug/l								
4M	Cadmium, Total	5	----	----	--				--	--								
5M	Chromium, Total	50	10	200.7	<10				1	ug/l								
6M	Chromium, Hexavalent	10	10	218.4	<10				1	ug/l								
7M	Copper, Total	20	10	200.7	<10				1	ug/l								
8M	Lead, Total	100	1	239.2	4				1	ug/l							X	Runoff
9M	Mercury, Total	0.2	----	----	--				--	--								
10M	Nickel, Total	40	1	249.2	2				1	ug/l							X	Runoff
11M	Selenium, Total	75	----	----	--				--	--								
12M	Silver, Total	10	----	----	--				--	--								
13M	Thallium, Total	100	----	----	--				--	--								
14M	Zinc, Total	5	10	200.7	80				1	ug/l							X	Runoff
15M	Cyanide, Total	20	----	----	--				--	--								
16M	Cyanide, Free	5	----	----	--				--	--								

4a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

4b Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

☒ Outfall Number 005 ☐ Intake (Sample upstream of any plant)

☐ Existing Discharge ☐ New Discharge (Base the basis for information presented, see page V-1 instructions for Questions V1

	POLLUTANT GROUP B (continued)	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value		b. Average of Analyses		c. Number of Analyses	4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason. Raw Material	Waste Constituent	Byproduct	Intake Water	Other Explain
					Concentration	Mass	Concentration	Mass		Concentration	Mass						
1756	Phenols, Total	5	10 *	SW 846 -9066	10				1	ug/l						Runoff
1051	Aluminum, Total	100	100	200.7	600				1	ug/l					X	Runoff
1056	Barium, Total	100	10	200.7	10				1	ug/l					X	Runoff
1078	Boron, Total	100	100	200.7	<100				1	ug/l						
1116	Cobalt, Total	50	0.1	219.2	2				1	ug/l					X	Runoff
1256	Iron, Total	30	10	200.7	670				1	ug/l					X	Runoff
1258	Iron, Dissolved	30	10	200.7	< 10				1	ug/l						
1496	Magnesium, Total	30	100	200.7	1900				1	ug/l					X	Runoff
1536	Molybdenum, Total	200	----	----	--				--	--						
1556	Manganese, Total	10	10	200.7	50				1	ug/l					X	Runoff
1746	Tin, Total	500	1	282.2	< 1				1	ug/l						
1960	Titanium, Total	400	----	----	--				--	--						

a. Maximum Daily Value - Report the highest daily value from the last year of data. For composite sampling, this value is the total mass or average concentration obtained in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration obtained in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period

b. Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration

* Note: Lower limit of detection used was 10 ug/l.

0000920

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA

☒ Outfall Number: 005

☐ Intake (Sample type/city location of sample):

☐ Existing Discharge

☐ New Discharge (Describe the basis for information presented, see page 9 of Instructions for Question V):

NOT REQUIRED

	POLLUTANT GROUP C-1 Volatile Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses			Raw Material	Major Intermediate	Final Product	Co-product	By-Product	Intake Water	Other (describe)
					Concentration (specify)	Mass	Concentration (specify)	Mass		Concentration (specify)	Mass							
1V	Acrolein	10																
2V	Acrylonitrile	10																
3V	Benzene	10																
5V	Bromoform	10																
6V	Carbon Tetrachloride	10																
7V	Chlorobenzene	10																
8V	Chlorodibromomethane	10																
9V	Chloroethane	10																
10V	2-Chloroethylvinyl Ether	10																
11V	Chloroform	10																
12V	Dichlorobromomethane	10																
14V	1,1-Dichloroethane	10																
15V	1,2-Dichloroethane	10																
16V	1,1-Dichloroethylene	10																
17V	1,2-Dichloropropane	10																
18V	1,3-Dichloropropylene	10																
19V	Ethylbenzene	10																

1. a. Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration based on a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration based on a minimum of four grab samples taken over the operating hours of the facility during a 24 hour period.

b. Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question V1 with regard to GC/MS fraction pollutants.

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NPDES Number PA 0009920

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

☒ Outfall Number 005 ☐ Intake (Sample type only location of sample)

☐ Existing Discharge ☐ New Discharge (does the basis for information presented, see page 8 b Instructions for Question V)

NOT REQUIRED

	POLLUTANT GROUP C-1 Volatile Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max. Daily Value: Concentration	3. Level Present a. Max. Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be reasonably present in the discharge, check the appropriate box(es) or describe another reason. Raw Material(s)	Manufacturing Process	Treatment	Known Intermediate Product	By Product	Intake Water	Other (Explain)
20V	Methyl Bromide	10															
21V	Methyl Chloride	10															
22V	Methylene Chloride	10															
23V	1,1,2,2 Tetrachloroethane	10															
24V	Tetrachloroethylene	10															
25V	Toluene	10															
26V	1,2 Trans Dichloroethylene	10															
27V	1,1,1 Trichloroethane	10															
28V	1,1,2 Trichloroethane	10															
29V	Trichloroethylene	10															
30V	Vinyl Chloride	10															

a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in at least four grab samples taken over the operating hours of the facility during a 24 hour period.

b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 peak pollutants.

EPA Form 3510-2C (Rev. 11-87)

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

[X] Outfall Number 005

[ ] Intake Sample (specify location of sample)

[ ] Existing Discharge

[ ] New Discharge (describe basis for information presented, see page 9 b Instructions for Question V)

	POLLUTANT GROUP C-3 Acid-Fraction Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses			Base Neutral	Mono Functional	Mineral	Total Qualitative Evaluation	Ag Evaluation	Total Water	Other (Explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
1A	2 Chlorophenol	10																
2A	2,4 Dichlorophenol	10																
3A	2,4 Dimethylphenol	10																
4A	4,6 Dinitro o Cresol	10																
5A	2,4 Dinitrophenol	50																
6A	2 Nitrophenol	10																
7A	4 Nitrophenol	50																
8A	P Chloro m Cresol	10																
9A	Pentachlorophenol	50																
10A	Phenol	10																
11A	2,4,6 Trichlorophenol	10																

NOT REQUIRED

1 a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 pond pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

(X) Outfall Number: 005 [ ] Intake (Sample (specify location of sample)

[ ] Existing Discharge [ ] New Discharge (See the basis for information presented, see page 9 Instructions for Question V)

NOTE: READ INSTRUCTIONS BEFORE PROCEEDING

	POLLUTANT GROUP C-3 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or blocks (see the instructions)						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses									
					Concentration	Mass	Concentration	Mass		Concentration	Mass	Raw Material	Intermediate	Final	Intermediate Product	By-Product	Finished Water	Other (Explain)
31B	Acenaphthene	10																
32B	Acenaphthylene	10																
33B	Anthracene	10																
34B	Benzidine	50																
35B	Benzo (a) Anthracene	10																
36B	Benzo (a) Pyrene	10																
37B	3,4 Benzo fluoranthene	10																
38B	Benzo (ghi) Perylene	10																
39B	Benzo (k) Fluoranthene	10																
40B	Bis (2 Chloro ethoxy) Methane	10																
41B	Bis (2 Chloroethyl) Ether	10																
42B	Bis (2 Chloro isopropyl) Ether	10																
43B	Bis (2 Ethylhexyl) Phthalate	10																
44B	4 Bromophenyl Phenyl Ether	10																

1. a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in at least four grab samples taken over the operating hours of the facility during a 24 hour period.

b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI and Appendix D for NPDES priority pollutants.

EPA Form 3510-2C (Rev. 12-87)

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[X] Outfall Number 005

[ ] Intake Sample (specify location of sample)

[ ] Existing Discharge

[ ] New Discharge (Show the basis for information presented, see page 9 Instructions for Question V)

	POLLUTANT GROUP C-3 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration (if other)	a. Max Daily Value: Mass	b. Average of Analyses: Concentration (if other)	b. Average of Analyses: Mass	c. Number of Analyses	4. Units: Concentration (if other)	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or else check the another reason: New Industrial	Known Industrial	Internal	Intermediate Product	By Product	Intake Water	Other (Explain)
154N	Butyl Benzyl Phthalate	10																
155N	2 Chloronaphthalene	10																
156N	4 Chlorophenyl Phenyl Ether	10																
157N	Chrysene	10																
158N	Dibenzo (a,h) Anthracene	10																
159N	1,2 Dichlorobenzene	10																
160N	1,3 Dichlorobenzene	10																
161N	1,4 Dichlorobenzene	10																
162N	3,3' Dichlorobenzidine	50																
163N	Diethyl Phthalate	20																
164N	Dimethyl Phthalate	20																
165N	Di N Butyl Phthalate	20																
166N	2,4 Dinitrotoluene	10																
167N	2,6 Dinitrotoluene	10																
168N	Di N Octyl Phthalate	20																
169N	1,2 Diphenylhydrazine (as Azobenzene)	10																

NOT REQUIRED

2.a Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration based on a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration based on a set of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

2.b Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 3 peak pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number (if known) PA 0009920

☒ Outfall Number 005

☐ Intake (Sample repeat this sequence of sample)

☐ Existing Discharge

☐ New Discharge (Complete the boxes for information presented, see page 9 b Instructions for Question V)

NOT REQUIRED

	POLLUTANT GROUP C-2 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate box or describe another reason.						
					a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses			Never Manufactured	Manufactured but not Used	Intermediate	Contained in Product(s)	My Product(s)	Present in Water	Other (Explain)
					Concentration or others	Mass	Concentration or others	Mass		Concentration or others	Mass							
11B	Phenanthrene	10																
12B	Pyrene	10																
13B	Hexachlorobenzene	10																
14B	Hexachlorobutadiene	10																
15B	Hexachloro cyclopentadiene	10																
16B	Hexachloroethane	10																
17B	Indeno (1,2,3-cd) Pyrene	10																
18B	Isophorone	10																
19B	Naphthalene	10																
20B	Nitrobenzene	10																
21B	N Nitrosodimethylamine	20																
22B	N Nitrosodi N Propylamine	20																
23B	N Nitrosodiphenylamine	20																
24B	Phenanthrene	10																
25B	Pyrene	10																
26B	1,2,4 Trichlorobenzene	10																

3.a Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 peak pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009970

Outfall Number 005

[ ] Intake Sample (specify location of sample)

[ ] Existing Discharge

[ ] New Discharge (describe basis for information presented, see page 9 b instructions for Question V)

	POLLUTANT GROUP C-4 Pesticides**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason						
					a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses			Raw Material	Mass Balance	Internal	Intermediate Product	By Product	Intake Water	Other (explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
11*	Aldrin	10																
21*	Alpha BHC	10																
31*	Beta BHC	10																
41*	Gamma BHC	10																
51*	Delta BHC	10																
61*	Chlordane	10																
71*	4,4' DDT	10																
81*	4,4' DDE	10																
91*	4,4' DDD	10																
101*	Dieldrin	10																
111*	Alpha Endosulfan	10																
121*	Beta Endosulfan	10																
131*	Endosulfan Sulfate	10																
141*	Endrin	10																
151*	Endrin Aldehyde	10																
161*	Heptachlor	10																
171*	Heptachlor Epoxide	10																
258*	Toxaphene	10																
268*	2,3,7,8 Tetrachlorodibenzo P Dioxin																	

1.a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration based on composite samples taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the maximum or flow weighted total mass or average concentration based on at least four grab samples taken over the operating hours of the facility during a 24 hour period.

1.b Average of Analyses: Determine the average of all samples taken within the past year and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS 5 peak pollutants.

* Analysis for Dioxin is not required unless your response to Question VI B indicates a need to do such testing.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

☒ Outfall Number 005

☐ Intake Sample (specify location of sample)

☐ Existing Discharge

☐ New Discharge (describe basis for information presented, see page 9 in instructions for Question V)

NOT REQUIRED

	POLLUTANT GROUP D PCB's**	Minimum Acceptable Detection Level (ppb)	1. Detection Level Used (ppb)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses									
					Concentration	Mass	Concentration	Mass		Concentration	Mass	Believed Present	Believed Absent	Source Unknown	Intake (optional)	Present in Effluent	Present in Intake	Other (explain)
184*	PCB 1242	20																
185*	PCB 1254	20																
186*	PCB 1221	20																
187*	PCB 1232	20																
188*	PCB 1248	20																
189*	PCB 1260	20																
190*	PCB 1016	20																

3.a Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS fraction pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

(X) Outfall Number 005

( ) Intake (sample type only for intake of complex)

( ) Existing Discharge

( ) New Discharge (does the basis for information presented, see page 9 b instructions for Question V)

	POLLUTANT GROUP K Radioactivity	Minimum Acceptable Detection Level Used (pCi/l)	1. Detection Level Used (pCi/l)	2. EPA Method Number Used	3. Level Present a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses	4. Units		5. If you have any reason to expect the pollutant to be currently present in this discharge, check the appropriate box(es) or describe another reason						
					Concentration	Mass	Concentration	Mass		Concentration	Mass	Raw Material	Intermediate	Product	Byproduct	Finished Water	Other (explain)	
1K	Radioactivity: (1) Alpha, Total	Not Available	9E-1	*	< 9 E-1		-		1	pCi/l								
2K	(2) Beta, Total	"	9E-1	*	2.6+ E0	0.8	-		1	pCi/l							X	Runoff
3K	(3) Radium, Total	"	1E0	900.1	< 1 E0		-		1	pCi/l								
4K	(4) Radium 226, Total	"	7E-1	*	< 7 E-1		-		1	pCi/l								

5.a Maximum Daily Value. Report the highest daily value from the last year of data. For continuous monitors, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least hourly grab samples taken over the operating hours of the facility during a 24 hour period.

5.b Average of Analyses. Enter/enter the average of all samples taken within the past year, and report both mass and concentration.

*Radiological analyses by proportional counter method. Analyses conducted in accordance with contractor laboratory (Teledyne Isotopes) procedures. Laboratory participates in US EPA Interlaboratory Cross Comparison Program.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [X] Intake Sample (specify location of sample) (Unit 1 Intake)

[ ] Existing Discharge [ ] New Discharge (describe the basis for information presented, see page 9 instructions for Question V)

	1. POLLUTANT GROUP A	2. LEVEL PRESENT						3. UNITS	
		a. Maximum Daily Value*		b. Maximum 30 Day Value (if available)**		c. Long Term Avgs. Value (if available)***		d. No. of Analyses	a. Concentration	b. Mass
		(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		
1A	Biochemical Oxygen Demand, BOD	1.8		1.4		----		3	mg/l	
2A	Chemical Oxygen Demand, COD	20.0		15.0		----		3	mg/l	
3A	Total Organic Carbon, TOC	4.3		3.7		----		3	mg/l	
4A	Total Suspended Solids, TSS	160		49		22		49	mg/l	
5A	Total Dissolved Solids, TDS	136		130		----		3	mg/l	
6A	Ammonia as N	0.4		0.3		----		3	mg/l	
7A	Oil and Grease	2		< 1		< 1		49	mg/l	
8A	Bromide	< 0.1		< 0.1		----		3	mg/l	
9A	Chlorine, Total Residual	---		----		---		---	----	
10A	Temperature winter	Ambient	Value	Ambient	Value	Ambient	Value	----	(1)	(2)
11A	Temperature summer	Ambient	Value	Ambient	Value	Ambient	Value	----	(1)	(2)
12A	pH	7.32 Minimum	8.89 Maximum					50	standard units	standard units

* Maximum Daily Value: Be sure to give the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in each of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

** Maximum 30 Day Value: Determine the average of all daily values taken during each calendar month and report the highest average.

*** Long Term Average Value: If you monitor more than one daily value for a pollutant, determine the average of all values within the last year and report both the mean and the [illegible]

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [X] Intake Sample (specify location of sample)

[ ] Existing Discharge [ ] New Discharge (Base the basis for information presented, see page 5 b instructions for Question V)

	POLLUTANT GROUP B	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate box or describe another reason						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses			Raw Material	Waste Constituent	Byproduct	Intake Water (Treated)	By-Product	Intake Water (Untreated)	Other (Explain)
					Concentration or Mass	Mass	Concentration or Mass	Mass		Concentration or Mass	Mass							
1M	Color		1 cu	110.2	30		27		3	CU								
2M	Fecal Coliform **		Colony/100 ml	909.6	170		130		3	Col./100 ml								
15M	Fluoride *	100	200	340.2	<200		<200		3	ug/l								
16M	Nitrate-Nitrite as N		500	353.2	1800		1700		3	ug/l								
17M	Nitrogen, Total Organic (as N) * **		NH_3=500 TKN=100	351.2 350.2	1000		833		3	ug/l								
18M	Phosphorus (as P), Total		10	365.3	200		165		3	ug/l								
19M	Sulfate (as SO_4)	1,000	100	300	5000		4200		3	ug/l								
20M	Sulfide (as S)	1,000	100	376.1	<100		<100		3	ug/l								
21M	Sulfite (as SO_3)	2,000	2000	377.1	<2000		<2000		3	ug/l								
22M	Surfactants (MBAS)	25	20	425.1	30		23		3	ug/l								

5.a Maximum Daily Value - Report the highest daily value from the last year of data. For continuous samples, this value is the total mass or average concentration based on a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration based on a minimum of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

5.b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

* Note: System laboratory used standard curve with 0.2 mg/l as lowest calibration point

** Tested per Standard Methods for the Examination of Water and Wastewater.

*** TON = NH_3 + TKN.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

☐ Outfall Number _____ ☒ Intake Sample (specify by nature of sample)

☐ Existing Discharge ☐ New Discharge (Use the basis for information presented, see page 9 b instructions for Question V)

	POLLUTANT GROUP 8 (continued)	Minimum Acceptable Detection Level (ppb)	1. Discharge Level Used (ppb)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	3. Level Present a. Max Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Have Not Required	Have Not Treated	Believed Absent	Believed Present	Believed Present	Believed Present	Believed Present
1M	Antimony, Total	300	1	204.2	2		<1		3	ug/l								
2M	Arsenic, Total	50	0.1	206.2	1		<1		3	ug/l								
3M	Beryllium, Total	5	0.2	210.1	0.2		0.2		3	ug/								
4M	Cadmium, Total	5	0.1	213.2	0.5		0.3		3	ug/								
5M	Chromium, Total	50	10	200.7	<10		<10		3	ug/								
6M	Chromium, Hexavalent	10	10	218.4	<10		<10		3	ug/								
7M	Copper, Total	25	10	200.7	<10		<10		3	ug/l								
8M	Lead, Total	100	1	239.2	5		4		3	ug/l								
9M	Mercury, Total	0.2	0.2	245.1	<0.2		<0.2		3	ug/l								
10M	Nickel, Total	40	1	249.2	10		9		3	ug/l								
11M	Selenium, Total	75	2	270.2	<2		<2		3	ug/l								
12M	Silver, Total	10	10	200.7	<10		10		3	ug/l								
13M	Thallium, Total	100	1	279.2	<1		<1		3	ug/l								
14M	Zinc, Total	5	10	200.7	90		83		3	ug/l								
15M	Cyanide, Total	20	5	SW-846 -9012	<5		-		1	ug/l								
16M	Cyanide, Free	5	5	335.2	8*		-		1	ug/l								

3.a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration based on a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the maximum or flow weighted total mass or average concentration based on a series of at least hourly grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

* Note: Higher level noted, most likely due to analysis interference.

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NPDES Number PA _____

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

☐ Outfall Number _____ ☒ Intake Sample (specify location of sample)

☐ Existing Discharge ☐ New Discharge (base the basis for information presented, see page V-1 instructions for Question V)

	POLLUTANT GROUP B (continued)	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	a. Max Daily Value: Mass	b. Average of Analyses: Concentration	b. Average of Analyses: Mass	c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be reasonably present in this discharge, check the appropriate block or describe another reason: Raw Material	Waste Reactant	Solvent	Intake Water	Other Explain
1TM	Phenols, Total	5	5	SW 846 -9066	< 5		–		1	ug/l						
1AM	Aluminum, Total	100	100	200.7	900		667		3	ug/l						
1BM	Barium, Total	100	10	200.7	40		33		3	ug/l						
2CM	Boron, Total	100	100	200.7	<100		<100		3	ug/l						
2DM	Cobalt, Total	50	0.1	219.2	5		4		3	ug/l						
2EM	Iron, Total	30	10	200.7	1840		1540		3	ug/l						
2AM	Iron, Dissolved	20	10	200.7	100		85		3	ug/l						
2BM	Magnesium, Total	30	100	200.7	5800		5533		3	ug/l						
2CM	Molybdenum, Total	100	1	246.2	2		< 1		3	ug/l						
2DM	Manganese, Total	10	10	200.7	260		230		3	ug/l						
2EM	Tin, Total	200	1	282.2	< 1		< 1		3	ug/l						
2FM	Titanium, Total	400	1	283.2	10		6		3	ug/l						

a. Maximum Daily Value - Report the highest daily value from the last year of data. For composite sampling, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab sampling, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

b. Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

[ ] Outfall Number _____ [X] Intake Sample (specify location of sample)

[ ] Existing Discharge [ ] New Discharge (describe basis for information presented, see page 9 Instructions for Question V)

	POLLUTANT GROUP C-1 Volatile Organics**	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses			Raw Material	Intermediate Product	Final Product	By Product	Intake Water	Other (Explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
1V	Acrolein	10	100 and 5	624	<100		< 5		3	ug/l								
2V	Acrylonitrile	10	100 and 5	624	<100		< 5		3	ug/l								
3V	Benzene	10	5	624	< 5		< 5		3	ug/l								
4V	Bromoform	10	5	624	< 5		< 5		3	ug/l								
5V	Carbon Tetrachloride	10	5	624	< 5		< 5		3	ug/l								
6V	Chlorobenzene	10	5	624	< 5		< 5		3	ug/l								
7V	Chlorodibromomethane	10	5	624	< 5		< 5		3	ug/l								
8V	Chloroethane	10	10	624	< 10		< 10		3	ug/l								
9V	2-Chloroethylvinyl Ether	10	10	624	< 10		< 10		3	ug/l								
10V	Chloroform	10	5	624	< 5		< 5		3	ug/l								
11V	Dichlorobromomethane	10	5	624	< 5		< 5		3	ug/l								
12V	1,1 Dichloroethane	10	5	624	< 5		< 5		3	ug/l								
13V	1,2 Dichloroethane	10	5	624	< 5		< 5		3	ug/l								
14V	1,1 Dichloroethylene	10	5	624	< 5		< 5		3	ug/l								
15V	1,2 Dichloropropane	10	5	624	< 5		< 5		3	ug/l								
16V	1,3 Dichloropropylene	10	5	624	< 5		< 5		3	ug/l								
17V	Ethylbenzene	10	5	624	< 5		< 5		3	ug/l								

1. Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

2. Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS fraction pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

☐ Outfall Number _____ ☒ Intake (Sample typically location of sample)

☐ Existing Discharge ☐ New Discharge (See the basis for information presented, see page 9 b Instructions for Question V)

	POLLUTANT GROUP C-1 Volatile Organics**	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present a. Max. Daily Value: Concentration	3. Level Present a. Max. Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be reasonably present in this discharge, check the appropriate box(es) or describe another reason. Raw Material	Manufactured	Intermediate	Finished Product	By-Product	Waste	Other (Explain)
20V	Methyl Bromide	10	10	624	< 10		<10		3	ug/l								
21V	Methyl Chloride	10	10	624	< 10		< 10		3	ug/l								
22V	Methylene Chloride	10	5	624	< 5		< 5		3	ug/l								
23V	1,1,2,2 Tetrachloroethane	10	5	624	< 5		< 5		3	ug/l								
24V	Tetrachloroethylene	10	5	624	< 5		< 5		3	ug/l								
25V	Toluene	10	5	624	< 5		< 5		3	ug/l								
26V	1,2 Trans Dichloroethylene	10	5	624	< 5		< 5		3	ug/l								
27V	1,1,1 Trichloroethane	10	5	624	< 5		< 5		3	ug/l								
28V	1,1,2 Trichloroethane	10	5	624	< 5		< 5		3	ug/l								
29V	Trichloroethylene	10	5	624	< 5		< 5		3	ug/l								
31V	Vinyl Chloride	10	10	624	< 10		< 10		3	ug/l								

3. a. Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3. b. Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to 126/BNS 5 pack pollutants.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA _____

[ ] Outfall Number _____ [X] Intake Sample (specify location of sample)

[ ] Existing Discharge [ ] New Discharge (describe basis for information presented, see page 9 b Instructions for Question V)

	POLLUTANT GROUP C-2 Acid-Fraction Organics**	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. KPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses			Raw Material	Major Intermediate	Solvent	Intermediate Product	By Product	Intake Water	Other (explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
1A	2 Chlorophenol	10	10	625	< 10		< 10		3	ug/l								
2A	2,4 Dichlorophenol	10	10	625	< 10		< 10		3	ug/l								
3A	2,4 Dimethylphenol	10	10	625	< 10		< 10		3	ug/l								
4A	4,6 Dinitro o Cresol *	10	25	625	< 25		< 25		3	ug/l								
5A	2,4 Dinitrophenol	50	25	625	< 25		< 25		3	ug/l								
6A	2 Nitrophenol	10	10	625	< 10		< 10		3	ug/l								
7A	4 Nitrophenol	50	25	625	< 25		< 25		3	ug/l								
8A	P-Chloro m Cresol	10	10	625	< 10		< 10		3	ug/l								
9A	Pentachlorophenol	50	25	625	< 25		< 25		3	ug/l								
10A	Phenol	10	10	625	< 10		< 10		3	ug/l								
11A	2,4,6 Trichlorophenol	10	10	625	< 10		< 10		3	ug/l								

*Note: Lower limit of detection used was 25 ug/l

3.a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS 5 peak pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [X] Intake Sample (specify location of sample)

[ ] Existing Discharge [ ] New Discharge (Use the blocks for information presented, see page 25 Instructions for Question V)

	POLLUTANT GROUP C-3 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	a. Max Daily Value: Mass	b. Average of Analyses: Concentration	b. Average of Analyses: Mass	c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: New Material	Mass Increased	Increased	Some Indirect Product	By Product	Intake Water	Other (Explain)
1N	Acenaphthene	10	10	625	<10		<10		3	ug/l								
2N	Acenaphthylene	10	10	625	<10		<10		3	ug/l								
3N	Anthracene	10	10	625	<10		<10		3	ug/l								
4N	Benzidine	50	25	625	<25		<25		3	ug/l								
5N	Benzo (a) Anthracene	10	10	625	<10		<10		3	ug/l								
6N	Benzo (a) Pyrene	10	10	625	< 10		< 10		3	ug/l								
7N	3,4 Benzo fluoranthene	10	10	625	< 10		< 10		3	ug/l								
8N	Benzo (ghi) Perylene	10	10	625	< 10		< 10		3	ug/l								
9N	Benzo (k) Fluoranthene	10	10	625	< 10		< 10		3	ug/l								
10N	Bis (2 Chloro-ethoxy) Methane	10	10	625	< 10		< 10		3	ug/l								
11N	Bis (2 Chloroethyl) Ether	10	10	625	< 10		< 10		3	ug/l								
12N	Bis (2 Chloro-isopropyl) Ether	10	10	625	< 10		< 10		3	ug/l								
13N	Bis (2 Ethylhexyl) Phthalate	10	10	625	< 10		< 10		3	ug/l								
14N	4 Bromophenyl Phenyl Ether	10	10	625	< 10		< 10		3	ug/l								

3.a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in composite samples taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 peak pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [X] Intake Sample (specify location of sample)

[ ] Existing Discharge [ ] New Discharge (describe basis for information presented, see page 9 instructions for Question V)

	POLLUTANT GROUP C-3 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses			Base Material	Waste Treatment	Solvent	Intake Product	By Product	Intake Water	Other (explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
1585	Butyl Benzyl Phthalate	10	10	625	< 10		< 10		3	ug/l								
1625	2 Chloronaphthalene	10	10	625	< 10		< 10		3	ug/l								
1730	4 Chlorophenyl Phenyl Ether	10	10	625	< 10		< 10		3	ug/l								
1810	Chrysene	10	10	625	< 10		< 10		3	ug/l								
1940	Dibenzo (a,h) Anthracene	10	10	625	< 10		< 10		3	ug/l								
2040	1,2 Dichlorobenzene	10	10	625	< 10		< 10		3	ug/l								
2150	1,3 Dichlorobenzene	10	10	625	< 10		< 10		3	ug/l								
2250	1,4 Dichlorobenzene	10	10	625	< 10		< 10		3	ug/l								
2380	3,3' Dichlorobenzidine	50	25	625	< 25		< 25		3	ug/l								
2606	Diethyl Phthalate	20	10	625	< 10		< 10		3	ug/l								
2546	Dimethyl Phthalate	20	10	625	< 10		< 10		3	ug/l								
2690	Di N Butyl Phthalate	20	10	625	< 10		< 10		3	ug/l								
2700	2,4 Dinitrotoluene	10	10	625	< 10		< 10		3	ug/l								
2840	2,6 Dinitrotoluene	10	10	625	< 10		< 10		3	ug/l								
2930	Di N Octyl Phthalate	20	10	625	< 10		< 10		3	ug/l								
3000	1,2 Diphenylhydrazine (as Azobenzene)	10	10	625	< 10		< 10		3	ug/l								

* a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in each of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS 5 pack pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

[ ] Outfall Number _____ [X] Intake (Intake samples must be taken at the same time as effluent samples)

[ ] Existing Discharge [ ] New Discharge (check here for submission of data requested, see page 9 of instructions for Question V)

	POLLUTANT GROUP C-3 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason						
					a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses									
					Concentration or other	Mass	Concentration or other	Mass		Concentration or other	Mass	Base Neutral	Acid Fraction	Pesticide	Intermediate Products	Oil Products	Into the Water	Other (Explain)
61B	Acenaphthene	10	10	625	< 10		< 10		3	ug/l								
62B	Acenaphthylene	10	10	625	< 10		< 10		3	ug/l								
63B	Anthracene	10	10	625	< 10		< 10		3	ug/l								
64B	Benzidine	10	10	625	< 10		< 10		3	ug/l								
65B	Benzo (a) anthracene (1,2-benzanthracene)	10	10	625	< 10		< 10		3	ug/l								
66B	Benzo (a) pyrene (3,4-benzopyrene)	10	10	625	< 10		< 10		3	ug/l								
67B	Benzo (b) fluoranthene (3,4-benzofluoranthene)	10	10	625	< 10		< 10		3	ug/l								
68B	Benzo (ghi) perylene (1,12-benzoperylene)	10	10	625	< 10		< 10		3	ug/l								
69B	Benzo (k) fluoranthene (11,12-benzofluoranthene)	10	10	625	< 10		< 10		3	ug/l								
70B	Bis (2-chloroethoxy) methane	10	10	625	< 10		< 10		3	ug/l								
71B	Bis (2-chloroethyl) ether	10	10	625	< 10		< 10		3	ug/l								
72B	Bis (2-chloroisopropyl) ether	10	10	625	< 10		< 10		3	ug/l								
73B	Bis (2-ethylhexyl) phthalate	10	10	625	< 10		< 10		3	ug/l								
74B	4-Bromophenyl phenyl ether	10	10	625	< 10		< 10		3	ug/l								
75B	Butyl benzyl phthalate	10	10	625	< 10		< 10		3	ug/l								
76B	2-Chloronaphthalene	10	10	625	< 10		< 10		3	ug/l								
77B	4-Chlorophenyl phenyl ether	10	10	625	< 10		< 10		3	ug/l								
78B	Chrysene	10	10	625	< 10		< 10		3	ug/l								
79B	Dibenzo (a,h) anthracene (1,2,5,6-dibenzanthracene)	10	10	625	< 10		< 10		3	ug/l								
80B	1,2-Dichlorobenzene	10	10	625	< 10		< 10		3	ug/l								
81B	1,3-Dichlorobenzene	10	10	625	< 10		< 10		3	ug/l								
82B	1,4-Dichlorobenzene	10	10	625	< 10		< 10		3	ug/l								
83B	3,3-Dichlorobenzidine	10	10	625	< 10		< 10		3	ug/l								
84B	Diethyl phthalate	10	10	625	< 10		< 10		3	ug/l								
85B	Dimethyl phthalate	10	10	625	< 10		< 10		3	ug/l								
86B	Di-n-butyl phthalate	10	10	625	< 10		< 10		3	ug/l								
87B	2,4-Dinitrotoluene	10	10	625	< 10		< 10		3	ug/l								
88B	2,6-Dinitrotoluene	10	10	625	< 10		< 10		3	ug/l								
89B	Di-n-octyl phthalate	10	10	625	< 10		< 10		3	ug/l								
90B	1,2-Diphenylhydrazine (as Azobenzene)	10	10	625	< 10		< 10		3	ug/l								
91B	Fluoranthene	10	10	625	< 10		< 10		3	ug/l								
92B	Fluorene	10	10	625	< 10		< 10		3	ug/l								
93B	Hexachlorobenzene	10	10	625	< 10		< 10		3	ug/l								
94B	Hexachlorobutadiene	10	10	625	< 10		< 10		3	ug/l								
95B	Hexachlorocyclopentadiene	10	10	625	< 10		< 10		3	ug/l								
96B	Hexachloroethane	10	10	625	< 10		< 10		3	ug/l								
97B	Indeno (1,2,3-cd) Pyrene	10	10	625	< 10		< 10		3	ug/l								
98B	Isophorone	10	10	625	< 10		< 10		3	ug/l								
99B	Naphthalene	10	10	625	< 10		< 10		3	ug/l								
100B	Nitrobenzene	10	10	625	< 10		< 10		3	ug/l								
101B	N-Nitrosodimethylamine	20	10	625	< 10		< 10		3	ug/l								
102B	N-Nitrosodi-N-Propylamine	20	10	625	< 10		< 10		3	ug/l								
103B	N-Nitrosodiphenylamine	20	10	625	< 10		< 10		3	ug/l								
104B	Phenanthrene	10	10	625	< 10		< 10		3	ug/l								
105B	Pyrene	10	10	625	< 10		< 10		3	ug/l								
106B	1,2,4-Trichlorobenzene	10	10	625	< 10		< 10		3	ug/l								

1.a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

1.b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to 118/MS5 peak pollutants.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number (FA 0009920

[ ] Outfall Number _____ [X] Intake (Sample (specify location of sample)

[ ] Existing Discharge [ ] New Discharge (describe bases for information presented, see page 9 Instructions for Question V)

	POLLUTANT GROUP C-6 Pesticides**	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value		b. Average of Analyses		c. Number of Analyses	4. Units		5. If you have any reasons to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					Concentration or others	Mass	Concentration or others	Mass		Concentration or others	Mass	Never Manufactured	Manufactured but not	Intermediate	Product modification (Product)	By (Product)	Suitable Water	Other (Explain)
15*	Aldrin	10																
16*	Alpha BHC	10																
17*	Beta BHC	10																
18*	Gamma BHC	10																
19*	Delta BHC	10																
20*	Chlordane	10																
21*	4,4' DDT	10																
22*	4,4' DDE	10																
23*	4,4' DDD	10																
24*	Dieldrin	10																
25*	Alpha Endosulfan	10																
26*	Beta Endosulfan	10																
27*	Endosulfan Sulfate	10																
28*	Endrin	10																
29*	Endrin Aldehyde	10																
30*	Heptachlor	10																
31*	Heptachlor Epoxide	10																
32*	Toxaphene	10																
33*	DIOXIN: 2,3,7,8 Tetrachlorodibenzo p Dioxin																	

1.a Maximum Daily Value Report the highest daily value from the last year of data For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period

1.b Average of Analyses Determine the average of all samples taken within the past year, and report both mass and concentration

** See Instructions for Questions VI with regard to GC/MS 5 peak pollutants

* Analysis for Dioxin is not required unless your response to Question VI 8 indicates a need to do such testing

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [X] Intake (Sample tapestry location of sample)

[ ] Existing Discharge [ ] New Discharge (Describe the basis for information presented, see page 9 b Instructions for Question V)

	POLLUTANT GROUP D PCB's**	Minimum Acceptable Detection Level (ppb)	1. Detection Level Used (ppb)	2. EPA Method Number Used	3. Level Present a. Max Daily Value Concentration	a. Max Daily Value Mass	b. Average of Analyses Concentration	b. Average of Analyses Mass	c. Number of Analyses	4. Units Concentration	4. Units Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason. Raw Material	Mass factored	Intend	Intermediate Product	By Product	Intake Water	Other (Explain)
184*	PCB 1242	20	1	608	< 1		< 1		3	ug/l								
185*	PCB 1254	20	1	608	< 1		< 1		3	ug/l								
186*	PCB 1221	20	1	608	< 1		< 1		3	ug/l								
187*	PCB 1232	20	1	608	< 1		< 1		3	ug/l								
188*	PCB 1248	20	1	608	< 1		< 1		3	ug/l								
189*	PCB 1260	20	1	608	< 1		< 1		3	ug/l								
190*	PCB 1016	20	1	608	< 1		< 1		3	ug/l								

3 a Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3 b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS fraction pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

[ ] Outfall Number

[X] Intake Sample (specify location of sample)

[ ] Existing Discharge

[ ] New Discharge (describe basis for information presented, see page 9 b Instructions for Question V)

	POLLUTANT GROUP E Radioactivity	Minimum Acceptable Detection Level Used (pCi/l)	1. Detection Level Used (pCi/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to suspect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses									
					Concentration	Mass	Concentration	Mass		Concentration	Mass	Believed Absent	Believed Present	Believed Absent	Expected Present (explain)	Believed Present	Expected Absent (explain)	Other (explain)
1E	Radioactivity: (1) Alpha, Total	Not Available	9E-1, 2 E0	**	< 2 E0		< 1.6 E0		3	pCi/l								
2E	(2) Beta, Total	"	9E-1, 1 E0	**	5.2+ 1.0 E0		4.5+ 1.0 E0		3	pCi/l								
3E	(3) Radium, Total	"	5E-1, 9E-1	900.1	2.0+0.9 E0		1.0+ 1.0 E0		3	pCi/l								
4E	(4) Radium 226, Total	"	5E-1, 7E-1	**	< 7 E-1		< 6 E-1		3	pCi/l								

* Note: Average of analyses concentrations based on arithmetic means.

3 a Maximum Daily Value Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3 b Average of Analyses Determine the average of all samples taken within the past year, and report both mass and concentration.

** Radiological analyses by proportional counter method. Analyses conducted in accordance with contractor laboratory (Teledyne Isotopes) procedures. Laboratory participates in US EPA Interlaboratory Cross Comparison Program.

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NPDES Number PA 0009920

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

[ ] Outfall Number _____ [ ] Intake (Sample type/city location of sample)

[ ] Existing Discharge [X] New Discharge (Use the back for information presented, see page 9 Instructions for Question V)

SWRO 1

	1. POLLUTANT GROUP A	2. LEVEL PRESENT							3. UNITS	
		a. Maximum Daily Value*		b. Maximum 30 Day Value (if available)**		c. Long Term Avgs. Value (if available)***		d. No. of Analyses	a. Concentration	b. Mass
		(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass			
1A	Biochemical Oxygen Demand, BOD	1.0		----		----		1	mg/l	
2A	Chemical Oxygen Demand, COD	11		----		----		1	mg/l	
3A	Total Organic Carbon, TOC	2.4		----		----		1	mg/l	
4A	Total Suspended Solids, TSS	43		----		----		1	mg/l	
5A	Total Dissolved Solids, TDS	78		----		----		1	mg/l	
6A	Ammonia as N	< 0.5		----		----		1	mg/l	
7A	Chloride	< 1.0		----		----		1	mg/l	
8A	Bromide	----		----		----			mg/l	
9A	Cyanide, Total Residual	< 0.01		----		----		1	mg/l	
10A	Temperature winter	Ambient	Value	----	Value	----	Value	----	°F	°F
11A	Temperature summer	Ambient	Value	----	Value	----	Value	----	°F	°F
12A	pH	8.18 Minimum	8.18 Maximum					1	standard units	standard units

* Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a week's worth of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

** Maximum 30 Day Value: Determine the average of all daily values taken during each calendar month and report the highest average [illegible]

*** Long Term Average Value: If you can assess more than one daily value for a pollutant, determine the average of all values within the last year and report both the mass and concentration [illegible]

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: FA 0009920

☐ Outfall Number _____ ☐ Intake (Sample taper city location of sample)

☐ Existing Discharge ☐ New Discharge (Describe basis for information presented, see page 9 b. Instructions for Question V)

SWRO 1

	POLLUTANT GROUP B	Minimum Acceptable Detection Level (ppb)	1. Detection Level Used (ppb)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	3. Level Present a. Max Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be necessary present in this discharge, check the appropriate block or blocks and the number reasons. Raw Material	Intermediate Product	Final Product	Source Water	Other Sources
32*	Color		----	----	---				---	---							
10*	Fecal Coliform *		Colony 100 ml	909.6	700				1	Col. 100 ml							(1)
15*	Fluoride	100	----	----	---				---	---							
16*	Nitrate-Nitrite (as N)		----	----	---				---	---							
17*	Nitrogen, Total Organic (as N) **		NH_3=500 TKN=100	351.2 350.2	600				1	ug/l							(1)
18*	Phosphorus (as P), Total		10	365.3	500				1	ug/l							(1)
19*	Sulfate (as SO_4)	1,000	----	----	---				---	---							
20*	Sulfide (as S)	1,000	----	----	---				---	---							
21*	Sulfite (as SO_3)	1,000	----	----	---				---	---							
22*	Surfactants (MBAS)	25	----	----	--				---	---			1				

4 a. Maximum Daily Value - Report the highest daily value from the last year of data. For continuously monitoring, this value is the total mean or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mean or average concentration found in a minimum of four grab samples taken over the operating hours of the facility during a 24 hour period.

4 b. Average of Analyses - Determine the average of all samples taken within the past year, and report both mean and concentration

(1) Plant laydown area and/or naturally occurring material.

* Tested per Standard Methods for the Examination of Water and Wastewater.

** TON = NH_3 + TKN.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

[ ] Outfall Number _____ [ ] Intake (Sample type only for intake of complex)

[ ] Existing Discharge [X] New Discharge (Does the basis for information presented, see page 9 b Instructions for Question V)

SWRO 1

	POLLUTANT GROUP B (continued)	1. Minimum Acceptable Detection Level (ug/l)	2. Detection Level Used (ug/l)	3. EPA Method Number Used	4. Level Present a. Max Daily Value Concentration	a. Max Daily Value Mass	b. Average of Analyses Concentration	b. Average of Analyses Mass	c. Number of Analyses	5. Units Concentration	5. Units Mass	6. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason. Now Presented	Now Not Presented	Believed	Believed Absent (Pollutant)	In Treatment	Intake Water	Other (explain)
1B	Antimony, Total	200	----	----	---				---	---								
2B	Arsenic, Total	50	0.1	206.2	2				1	ug/l				X				(1)
3B	Beryllium, Total	5	----	----	---				---	---								
4B	Cadmium, Total	5	0.1	213.2	0.3				1	ug/l				X				(1)
5B	Chromium, Total	50	10	200.7	<10				1	ug/l								
6B	Chromium, Hexavalent	10	----	----	---				---	---								
7B	Copper, Total	20	10	200.7	10				1	ug/				X				(1)
8B	Lead, Total	100	1	239.4	15				1	ug/				X				(1)
9B	Mercury, Total	0.2	----	----	---				---	---								
10B	Nickel, Total	40	1	249.2	4				1	ug/l				X				(1)
11B	Selenium, Total	75	----	----	---				---	---								
12B	Silver, Total	10	----	----	---				---	---								
13B	Thallium, Total	100	----	----	---				---	---								
14B	Zinc, Total	5	10	200.7	50				1	ug/l				X				(1)
15B	Cyanide, Total	20	5	SW 846 9012	<5				1	ug/l								
16B	Cyanide, Free	5	5	335.2	<5				1	ug/l								

4a Maximum Daily Value Report the highest daily value from the last year of data For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period

4b Average of Analyses Determine the average of all samples taken within the past year, and report both mass and concentration

(1) Plant laydown area and/or naturally occurring material.

NPDES Number PA 0009920

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

( ) Outfall Number _____ ( ) Intake (Sample to specify location of sample)

( ) Existing Discharge (X) New Discharge (does the basis for information presented, see page V-1 instructions for Question V)

SWRO 1

	POLLUTANT GROUP B (continued)	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value Concentration	3. Level Present a. Max Daily Value Mass	3. Level Present b. Average of Analyses Concentration	3. Level Present b. Average of Analyses Mass	3. Number of Analyses	4. Units Concentration	4. Units Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Raw Material	Manufacturing Process	Treatment	Treatment Product	By Product	Waste Water	Other Explanation
17M	Phenols, Total	5	5	SW-846 -9066	< 5				1	ug/l								
18M	Aluminum, Total	100	100	200.7	700				1	ug/l				X				(1)
19M	Barium, Total	100	----	----	---				---	---								
20M	Boron, Total	100	100	200.7	< 10				1	ug/l								
21M	Cobalt, Total	50	0.1	219.2	2				1	ug/l				X				(1)
22M	Iron, Total	30	10	200.7	1120				1	ug/l				X				(1)
23M	Iron, Dissolved	30	10	200.7	< 10				1	ug/l								
24M	Magnesium, Total	20	100	200.7	3100				1	ug/l				X				(1)
25M	Molybdenum, Total	100	1	246.1	2				1	ug/l				X				(1)
26M	Manganese, Total	10	10	200.7	90				1	ug/l				X				(1)
27M	Tin, Total	500	1	282.2	< 1				1	ug/l								
28M	Titanium, Total	500	----	----	---				---	---								

3.a Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration based on a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration based on a minimum of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

(1) Plant laydown area and/or naturally occurring material.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

☐ Outfall Number _____ ☐ Intake (Sample type/specify location of sample)

☐ Existing Discharge ☒ New Discharge (Please use back for additional pollutants, see page 9 b Instructions for Question V)

SWRO 1

	POLLUTANT GROUP C-1 Volatile Organics**	Minimum Acceptable Detection Level (ppb)	1. Concentration Level Used (ppb)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	a. Max Daily Value: Mass	b. Average of Analyses: Concentration	b. Average of Analyses: Mass	c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Raw Material	Maleic Anhydride	Reactant	Impurity in Product	By Product	Impurity in Water	Other (Explain)
1V	Acrolein	50																
2V	Acrylonitrile	50																
3V	Benzene	10																
5V	Bromoform	10																
6V	Carbon Tetrachloride	10																
7V	Chlorobenzene	10																
8V	Chlorodibromomethane	10																
9V	Chloroethane	10																
10V	2-Chloroethylvinyl Ether	10																
11V	Chloroform	10																
12V	Dichlorobromomethane	10																
14V	1,1-Dichloroethane	10																
15V	1,2-Dichloroethane	10																
16V	1,1-Dichloroethylene	10																
17V	1,2-Dichloropropane	10																
18V	1,3-Dichloropropylene	10																
19V	Ethylbenzene	10																

* Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS fraction pollutants.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake (sample upstream location of sample)

[ ] Existing Discharge [X] New Discharge (check the basis for information presented, see page 8 b Instructions for Question V)

SWRO 1

NOT REQUIRED

	POLLUTANT GROUP C-1 Volatile Organics**	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses	4. Units		5. If you have any reason to expect the pollutant to be reasonably present in this discharge, check the appropriate box below or describe another reason. Raw Material	Manufacturing Product	Byproduct	Intermediate Product	By Product	Intake Water	Other (Explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
29V	Methyl Bromide	10																
31V	Methyl Chloride	10																
32V	Methylene Chloride	10																
33V	1,1,2,2 Tetrachloroethane	10																
34V	Tetrachloroethylene	10																
35V	Toluene	10																
36V	1,2 Trans Dichloroethylene	10																
37V	1,1,1 Trichloroethane	10																
38V	1,1,2 Trichloroethane	10																
39V	Trichloroethylene	10																
81V	Vinyl Chloride	10																

a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to 113/RSS 5 peak pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake (Specify location of sample)

[ ] Existing Discharge [X] New Discharge (Describe basis for information presented, see page 8 instructions for Question V)

SWRO 1

NOT REQUIRED

	POLLUTANT GROUP C-2 Acid-Fraction Organics**	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses			Base Neutral	Metals Cyanide and Phenols	Volatile	Acid Extractable Phenols	Pesticides	Total Recoverable Phenols	Other Organics
					Concentration or other	Mass	Concentration or other	Mass		Concentration or other	Mass							
1A	2 Chlorophenol	10																
2A	2,4 Dichlorophenol	10																
3A	2,4 Dimethylphenol	10																
4A	4,6 Dinitro o Cresol	10																
5A	2,4 Dinitrophenol	50																
6A	2 Nitrophenol	10																
7A	4 Nitrophenol	50																
8A	P Chloro m Cresol	10																
9A	Pentachlorophenol	50																
10A	Phenol	10																
11A	2,4,6 Trichlorophenol	10																

3.a Maximum Daily Value Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS 5 peak pollutants.

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NPDES Number PA

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

[ ] Outfall Number

[ ] Intake (Sample (specify location of sample)

[ ] Existing Discharge

[X] New Discharge (Use the blank for information provided, see page 9 Instructions for Question V)

SWRO 1

NOT REQUIRED

	POLLUTANT GROUP C-2 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reasons to expect the pollutant to be normally present in this discharge, check the appropriate blank or else check another reason.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses									
					Concentration	Mass	Concentration	Mass		Concentration	Mass	Mass Unknown	Mass Considered	Believed Absent	Believed Present	By Estimate	Industry Waiver	Other (Explain)
1B	Acenaphthene	10																
2B	Acenaphthylene	10																
3B	Anthracene	10																
4B	Benzidine	50																
5B	Benzo (a) Anthracene	10																
6B	Benzo (a) Pyrene	10																
7B	3,4 Benzo fluoranthene	10																
8B	Benzo (ghi) Perylene	10																
9B	Benzo (k) Fluoranthene	10																
10B	Bis (2 Chloro-ethoxy) Methane	10																
11B	Bis (2 Chloroethyl) Ether	10																
12B	Bis (2 Chloro-isopropyl) Ether	10																
13B	Bis (2 Ethylhexyl) Phthalate	10																
14B	4 Bromophenyl Phenyl Ether	10																

3.a Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration based on a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration based on a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 pack pollutants.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA _____

[ ] Outfall Number _____ [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [x] New Discharge (describe basis for submission provided, see page 9 Instructions for Question V)

SWRO 1

REQUIRED

	POLLUTANT GROUP C-3 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (ppb)	1. Detection Level Used (ppb)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses									
					Concentration (specify)	Mass	Concentration (specify)	Mass		Concentration (specify)	Mass	Raw Material	Intermediate Product	Final Product	By Product	Intake Water	Other (specify)
1B	Butyl Benzyl Phthalate	10																
2B	2 Chloronaphthalene	10																
3B	4 Chlorophenyl Phenyl Ether	10																
4B	Chrysene	10																
5B	Dibenzo (a,h) Anthracene	10																
6B	1,2 Dichlorobenzene	10																
7B	1,3 Dichlorobenzene	10																
8B	1,4 Dichlorobenzene	10																
9B	3,3' Dichlorobenzidine	50																
10B	Diethyl Phthalate	20																
11B	Dimethyl Phthalate	20																
12B	Di N Butyl Phthalate	20																
13B	2,4 Dinitrotoluene	10																
14B	2,6 Dinitrotoluene	10																
15B	Di N Octyl Phthalate	20																
16B	1,2 Diphenylhydrazine (as Azobenzene)	10																

* a. Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

b. Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 peak pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

[ ] Outfall Number _____ [ ] Intake (Sample type/qty for all types of samples)

[ ] Existing Discharge [X] New Discharge (check the boxes for information presented, see page 9 b Instructions for Question V)

SWRO 1

	POLLUTANT GROUP C-2 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (ppb)	1. Detection Level Used (ppb)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to suspect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses									
					Concentration	Mass	Concentration	Mass		Concentration	Mass	Believed Absent	Believed Present	Believed Present	Believed Present	Believed Present	Believed Present	Believed Present
31B	Phenanthrene	10																
32B	Pyrene	10																
33B	Hexachlorobenzene	10																
34B	Hexachlorobutadiene	10																
35B	Hexachloro cyclopentadiene	10																
36B	Hexachloroethane	10																
37B	Indeno (1,2,3-cd) Pyrene	10																
38B	Isophorone	10																
39B	Naphthalene	10																
40B	Nitrobenzene	10																
41B	N Nitrosodimethylamine	20																
42B	N Nitrosodi N Propylamine	20																
43B	N Nitrosodiphenylamine	20																
44B	Phenanthrene	10																
45B	Pyrene	10																
46B	1,2,4 Trichlorobenzene	10																

3.a Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS 5 peak pollutants.

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NPDES Number: PA 0009920

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

{ } Outfall Number _____ [ ] Intake (Intake (specify location of sample)

{ } Existing Discharge [X] New Discharge (does the basis for information presented, see page V-1 Instructions for Question V)

SWRO 1

NOT REQUIRED

	POLLUTANT GROUP C-4 Pesticides**	Minimum Acceptable Detection Level (ppb)	4. Detection Level Used (ppb)	5. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or blocks the number reasons.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses									
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
1P	Aldrin	10																
2P	Alpha BHC	10																
3P	Beta BHC	10																
4P	Gamma BHC	10																
5P	Delta BHC	10																
6P	Chlordane	10																
7P	4,4' DDT	10																
8P	4,4' DDE	10																
9P	4,4' DDD	10																
10P	Dieldrin	10																
11P	Alpha Endosulfan	10																
12P	Beta Endosulfan	10																
13P	Endosulfan Sulfate	10																
14P	Endrin	10																
15P	Endrin Aldehyde	10																
16P	Heptachlor	10																
17P	Heptachlor Epoxide	10																
25P	Toxaphene	10																
26P	DIOXIN:* 2,3,7,8 Tetrachlorodibenzo-P-Dioxin																	

1a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

1b Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS 5 peak pollutants.

* Analysis for Dioxin is not required unless your response to Question VI B indicates a need to do such testing.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake (Sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (Describe basis for information presented, see page 9 in instructions for Question V)

SWRO 1

NOT REQUIRED

	POLLUTANT GROUP B PCB's**	Minimum Acceptable Detection Level (ppb)	1. Detection Level Used (ppb)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses			Base Neutral	Acid Compounds	Pesticides	Total Phenolic Compounds	Dioxin	Volatile Organics	Other (Explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
102*	PCB 1242	20																
103*	PCB 1254	20																
104*	PCB 1221	20																
105*	PCB 1232	20																
106*	PCB 1248	20																
107*	PCB 1260	20																
108*	PCB 1016	20																

3 a Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3 b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS fraction pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (describe basis for information presented, see page 9 of instructions for Question V)

SWRO 1

NOT REQUIRED

	POLLUTANT GROUP K Radioactivity	2. Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max. Daily Value: Concentration	3. Level Present a. Max. Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason. Raw Material	Intermediate Product	By Product	In the Water	Other (explain)
	Radioactivity:																
1K	(1) Alpha, Total	Not Available															
2K	(2) Beta, Total	"															
3K	(3) Radium, Total	"															
4K	(4) Radium 226, Total	"															

5.a Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

5.b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0070670

[ ] Outfall Number ____ [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (describe basis for information presented, see page V-1 instructions for Question V)

SWRO 2

	1. POLLUTANT GROUP A	2. LEVEL PRESENT							3. UNITS	
		a. Maximum Daily Value*		b. Maximum 30 Day Value (if available)**		c. Long Term Avgs. Value (if available)***		d. No. of Analyses	a. Concentration	b. Mass
		(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass			
01	Biochemical Oxygen Demand, BOD	< 0.5		----		----		1	mg/l	
02	Chemical Oxygen Demand, COD	8		----		----		1	mg/l	
03	Total Organic Carbon, TOC	1.8		----		----		1	mg/l	
04	Total Suspended Solids, TSS	23		----		----		1	mg/l	
54	Total Dissolved Solids, TDS	150		----		----		1	mg/l	
65	Ammonia as N	< 0.5		----		----		1	mg/l	
11	Oil and Grease	< 1		----		----		1	mg/l	
64	Bromide	----		----		----		----	----	
90	Chlorine, Total Residual	< 0.01		----		----		1	mg/l	
010	Temperature winter	Ambient	Value	----	Value	----	Value	----	°C	°C
011	Temperature summer	Ambient	Value	----	Value	----	Value	----	°C	°C
12	pH	8.51 Minimum	8.51 Maximum	X	X	X	X	1	standard units	standard units

* Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

** Maximum 30 Day Value - Determine the average of all daily values taken during each calendar month and report the highest average.

*** Long Term Average Value - If you measure more than one daily value for a pollutant, determine the average of all values within the last year and report both the mass and concentration.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____

[ ] Intake (sample (specify location of sample)

[ ] Existing Discharge

[X] New Discharge (Describe basis for information presented, see page 9 b Instructions for Question V)

SWRO 2

	POLLUTANT GROUP B	Minimum Acceptable Detection Level (ppb)	1. Detection Level Used (ppb)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	3. Level Present a. Max Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Raw Material	By-Product	Intermediate Product	Finished Product	By-Product	Intake Water	Other (Explain)
1B	Color		----	----	---				---	---								
2B	Fecal Coliform *		1 col. / 100 ml	909.6	1900				1	col. / 100	ml							(1)
3B	Fluoride	100	----	----	---				---	---								
4B	Nitrate Nitrite as N		----	----	---				---	---								
5B	Nitrogen, Total Organic (as N) **		NH_3=500 TKN=100	351.2 550.2	400				1	ug/l								(1)
6B	Phosphorus (as P), Total		10	365.3	310				1	ug/l								(1)
7B	Sulfate (as SO_4)	1,000	----	----	---				---	---								
8B	Sulfide (as S)	1,000	----	----	---				---	---								
9B	Sulfite (as SO_3)	1,000	----	----	---				---	---								
10B	Surfactants (MBAS)	25	20	425.1	30				1	ug/l				X				(1)

3.a Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration

(1) Plant laydown area and/or naturally occurring material.

* Tested per Standard Methods for the Examination of Water and Wastewater.

** TON = NH_3 + TKN.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

☐ Outfall Number _____ ☐ Intake (Sample required by last page of application)

☐ Existing Discharge ☒ New Discharge (check the boxes for other sections presented, see page 9 instructions for Question V)

SWRO 2

	POLLUTANT GROUP B (continued)	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max. Daily Value: Concentration	a. Max. Daily Value: Mass	b. Average of Analyses: Concentration	b. Average of Analyses: Mass	c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason. Short Materials Retained	Long Term Effects Expected	Toxic	Toxic to Aquatic Organisms	Toxic to Human Beings	Other (explain)
1M	Antimony, Total	200	----	----	---				---	---							
2M	Arsenic, Total	50	0.1	206.2	2				1	ug/l				X				(1)
3M	Beryllium, Total	5	----	----	---				---	---							
4M	Cadmium, Total	5	0.1	213.2	0.3				1	ug/l				X				(1)
5M	Chromium, Total	50	10	200.7	< 10				1	ug/l							
6M	Chromium, Hexavalent	10	----	----	---				---	---							
7M	Copper, Total	30	10	200.7	< 10				1	ug/l				X				(1)
8M	Lead, Total	100	1	239.2	14				1	ug/l							
9M	Mercury, Total	0.2	----	----	---				---	---							
10M	Nickel, Total	40	1	249.2	4				1	ug/l				X				(1)
11M	Selenium, Total	75	----	----	---				----	---							
12M	Silver, Total	10	----	----	---				---	---							
13M	Thallium, Total	100	----	----	---				---	---							
14M	Zinc, Total	5	10	200.7	40				1	ug/l				X				(1)
15M	Cyanide, Total	20	5	SW 846 -9012	< 5				1	ug/l							
16M	Cyanide, Free	5	5	335.2	< 5				1	ug/l							

3.a Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in composite samples taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

(1) Plant laydown area and/or naturally occurring material.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

☐ Outfall Number _____

☐ Intake (Sample type/qty. location of sample)

☐ Existing Discharge

☒ New Discharge (Base the basis for information presented, see page 9 instructions for Question V)

SWRO 2

	POLLUTANT GROUP B (continued)	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	a. Max Daily Value: Mass	b. Average of Analyses: Concentration	b. Average of Analyses: Mass	c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to suspect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Base Neutral	Metals (not ionized)	Ionized	Other Pollutants	Pesticides	Volatile	Other (Explain)
1B1	Phenols, Total	5	5	SM 846 -9066	< 5				1	ug/l								
2B2	Aluminum, Total	100	100	200.7	700				1	ug/l				X				(1)
3B3	Barium, Total	100	----	----	--				--	--								
4B4	Boron, Total	100	100	200.7	<100				1	ug/l								
5B5	Cobalt, Total	50	0.1	219.2	1				1	ug/l				X				(1)
6B6	Iron, Total	20	10	200.7	710				1	ug/l				X				(1)
7B7	Iron, Dissolved	20	10	200.7	10				1	ug/l				X				(1)
8B8	Magnesium, Total	20	100	200.7	2000				1	ug/l				X				(1)
9B9	Molybdenum, Total	100	1	246.2	2				1	ug/l				X				(1)
10B10	Manganese, Total	10	10	200.7	40				1	ug/l				X				(1)
11B11	Tin, Total	200	1	282.2	< 1				1	ug/l								
12B12	Titanium, Total	400	----	----	--				--	--								

3.a Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration based on a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration based on a minimum of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses - Report the average of all samples taken within the past year, and report both mass and concentration.

(1) Plant laydown area and/or naturally occurring material.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

☐ Outfall Number _____ ☐ Intake (Sample upstream of intake structure)

☐ Existing Discharge ☒ New Discharge (Describe basis for information presented, see page 9 Instructions for Question V)

SWRO 2

NOT REQUIRED

	POLLUTANT GROUP C-1 Volatile Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	3. Level Present a. Max Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Raw Material	Waste Reactant	Intermediate	Intermediate Product	By Product	Intake Water	Other Source
1V	Acrolein	10																
2V	Acrylonitrile	10																
3V	Benzene	10																
5V	Bromoform	10																
6V	Carbon Tetrachloride	10																
7V	Chlorobenzene	10																
8V	Chlorodibromomethane	10																
9V	Chloroethane	10																
10V	2 Chloroethylvinyl Ether	10																
11V	Chloroform	10																
12V	Dichlorobromomethane	10																
14V	1,1 Dichloroethane	10																
15V	1,2 Dichloroethane	10																
16V	1,1 Dichloroethylene	10																
17V	1,2 Dichloropropane	10																
18V	1,3 Dichloropropylene	10																
19V	Ethylbenzene	10																

3.a Maximum Daily Value: Report the highest daily value from the last year of data. For composite sampling, this value is the total mass or average concentration found in composite samples taken over the operating hours of the facility during a 24 hour period. For grab sampling, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS fraction pollutants.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

☐ Outfall Number _____ ☐ Intake (Sample upstream location of sample)

☐ Existing Discharge ☒ New Discharge (Base the basis for information presented, see page 9 b Instructions for Question V)

SWRO 2

NOT REQUIRED

	POLLUTANT GROUP C-1 Volatile Organics**	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. KPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be commercially present in this discharge, check the appropriate box below or describe the reason.						
					a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses									
					Concentration (ug/l)	Mass	Concentration (ug/l)	Mass		Concentration (ug/l)	Mass	Raw Material	Intermediate Product	Manufactured	Final Product	By-Product	Possible Water	Other (Explain)
28V	Methyl Bromide	10																
29V	Methyl Chloride	10																
22V	Methylene Chloride	10																
23V	1,1,2,2 Tetrachloroethane	10																
24V	Tetrachloroethylene	10																
25V	Toluene	10																
26V	1,2 Trans Dichloroethylene	10																
27V	1,1,1 Trichloroethane	10																
28V	1,1,2 Trichloroethane	10																
29V	Trichloroethylene	10																
30V	Vinyl Chloride	10																

* a. Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in grab samples taken over the operating hours of the facility during a 24 hour period.

b. Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 peak pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake (sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (describe basis for information presented, see page 8 instructions for Question V)

SWRO 2

NOT REQUIRED

	POLLUTANT GROUP C-2 Acid-Fraction Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	3. Level Present a. Max Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Base Neutral	Metals (surface)	Mineral	Intake modified Pesticides	Dry Product	Intake Water	Other explanation
1A	2-Chlorophenol	10																
2A	2,4 Dichlorophenol	10																
3A	2,4 Dimethylphenol	10																
4A	4,6 Dinitro-o-Cresol	10																
5A	2,4 Dinitrophenol	50																
6A	2 Nitrophenol	10																
7A	4 Nitrophenol	50																
8A	P Chloro-m-Cresol	10																
9A	Pentachlorophenol	50																
10A	Phenol	10																
11A	2,4,6 Trichlorophenol	10																

3.a Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a set of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS 5 peak pollutants.

OMB No. 2040-0086

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA

[ ] Outfall Number

[ ] Intake Sample (specify location of sample)

[ ] Existing Discharge

[X] New Discharge (See the basis for information presented, see page 3 instructions for Question V)

SWRO 2

NOT REQUIRED

	POLLUTANT GROUP C-3 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses			New Material	Means Increased	Solvent	Solvent Mediates Product	By Product	Impurities Water	Other (Explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
10B	Acenaphthene	10																
20B	Acenaphthylene	10																
30B	Anthracene	10																
40B	Benzidine	50																
50B	Benzo (a) Anthracene	10																
60B	Benzo (a) Pyrene	10																
70B	3,4 Benzo fluoranthene	10																
80B	Benzo (ghi) Perylene	10																
90B	Benzo (k) Fluoranthene	10																
100B	Bis (2 Chloro-ethoxy) Methane	10																
110B	Bis (2 Chloroethyl) Ether	10																
120B	Bis (2 Chloro-isopropyl) Ether	10																
130B	Bis (2 Ethylhexyl) Phthalate	10																
140B	4 Bromophenyl Phenyl Ether	10																

** See instructions before Question VI with regard to CAS 3 peak pollutants

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

[ ] Outfall Number _____

[ ] Intake Sample (specify location of sample)

[ ] Existing Discharge

[X] New Discharge (See the basis for this determination provided, see page 9 b Instructions for Question V)

SWRO 2

NOT REQUIRED

	POLLUTANT (GROUP C-3 Base-Neutral Fraction Organics**)	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	3. Level Present a. Max Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or else check the another reason: Raw Material	Waste Treatment	Intended	Formed in the Treatment Process	By Product	Impurity in Water	Other (Explain)
15M	Butyl Benzyl Phthalate	10																
16M	2 Chloronaphthalene	10																
17M	4 Chlorophenyl Phenyl Ether	10																
18M	Chrysene	10																
19M	Dibenzo (a,h) Anthracene	10																
20M	1,2 Dichlorobenzene	10																
21M	1,3 Dichlorobenzene	10																
22M	1,4 Dichlorobenzene	10																
23M	3,3' Dichlorobenzidine	50																
24M	Diethyl Phthalate	20																
25M	Dimethyl Phthalate	20																
26M	Di N Butyl Phthalate	20																
27M	2,4 Dinitrotoluene	10																
28M	2,6 Dinitrotoluene	10																
29M	Di N Octyl Phthalate	20																
30M	1,2 Diphenylhydrazine (as Azobenzene)	10																

1.a. Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a minimum of four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b. Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS peak pollutants.

NPDES Number: PA 0009920

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

[ ] Outfall Number _____ [ ] Intake (Sample to specify location of sample)

[ ] Existing Discharge [X] New Discharge (does the basis for submissions presented, see page 9 b Instructions for Question V)

SWRO 2

	POLLUTANT GROUP C-3 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (ppb)	1. Detection Level Used (ppb)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	3. Level Present a. Max Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to suspect the pollutant to be normally present in this discharge, check the appropriate box or describe another reason: Base Materials	Metals Fractionated	Solvent	Solvent or Waste Pesticides	Dye Pesticides	Pesticide Wastes	Other (Explain)
31B	Phenanthrene	10																
32B	Pyrene	10																
33B	Hexachlorobenzene	10																
34B	Hexachlorobutadiene	10																
35B	Hexachloro cyclopentadiene	10																
36B	Hexachloroethane	10																
37B	Indeno (1,2,3-cd) Pyrene	10																
38B	Isophorone	10																
39B	Naphthalene	10																
40B	Nitrobenzene	10																
41B	N Nitrosodimethylamine	20																
42B	N Nitrosodi N Propylamine	20																
43B	N Nitrosodiphenylamine	20																
44B	Phenanthrene	10																
45B	Pyrene	10																
46B	1,2,4 Trichlorobenzene	10																

3a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3b Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 peak pollutants.

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0009920

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA _____

[ ] Outfall Number _____ ☐ Intake (Sample type, specify location of sample)

[ ] Existing Discharge ☒ New Discharge (Read the basis for information presented; see page 9 b Instructions for Question V)

SWRO 2

	POLLUTANT GROUP C-4 Pesticides**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	3. Level Present a. Max Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be currently present in this discharge, check the appropriate block or block the another reason: Base/Neutral	Mainly Functional	Volatile	Other Organic Compounds	By Chromatography	Metals, Cyanide, Water	Other Organics
1P	Aldrin	10																
2P	Alpha BHC	10																
3P	Beta BHC	10																
4P	Gamma BHC	10																
5P	Delta BHC	10																
6P	Chlordane	10																
7P	4,4' DDT	10																
8P	4,4' DDE	10																
9P	4,4' DDD	10																
10P	Dieldrin	10																
11P	Alpha Endosulfan	10																
12P	Beta Endosulfan	10																
13P	Endosulfan Sulfate	10																
14P	Endrin	10																
15P	Endrin Aldehyde	10																
16P	Heptachlor	10																
17P	Heptachlor Epoxide	10																
25P	Toxaphene	10																
26P	DIOXIN:* 2,3,7,8 Tetrachlorodibenzo-P-Dioxin																	

3.a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in composite samples taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses: Determine the average of all samples taken within the past year and report both mass and concentration.

** See Instructions for Question VI with regard to 129 CFR 55 peak pollutants.

* Analysis for Dioxin is not required unless your response to Question VI B indicates a need to do so by rating.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake (Sample at specific location of sample)

[ ] Existing Discharge [X] New Discharge (Describe on page V-1 instructions for Question V)

SWRO 2

	POLLUTANT GROUP D PCB's**	Minimum Acceptable Detection Level (ppb)	1. Detection Level Used (ppb)	2. EPA Method Number Used	3. Level Present a. Max Daily Value Concentration	a. Max Daily Value Mass	b. Average of Analyses Concentration	b. Average of Analyses Mass	c. Number of Analyses	4. Units Concentration	4. Units Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason. Raw Material	Mass Increased	Manufactured	Intermediate Product	By Product	Intake Water	Other (Explain)
180*	PCB 1242	20																
188*	PCB 1254	20																
198*	PCB 1221	20																
218*	PCB 1232	20																
228*	PCB 1248	20																
238*	PCB 1260	20																
248*	PCB 1016	20																

3 a Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3 b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS fraction pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number (if known) PA 0009920

[ ] Outfall Number _____ [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (describe basis for information presented, see page V-1 Instructions for Question V)

SWRO 2

NOT REQUIRED		POLLUTANT GROUP E Radioactivity	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
						a. Max Daily Value		b. Average of Analyses		c. Number of Analyses			Raw Material	Water Treatment	Solvent	Intermediate Product	By Product	Finished Water	Other (Explain)
						Concentration or Pollution	Mass	Concentration or Pollution	Mass		Concentration or Pollution	Mass							
		Radioactivity:																	
	1E	(1) Alpha, Total	Not Available																
	2E	(2) Beta, Total	"																
	3E	(3) Radium, Total	"																
	4E	(4) Radium 226, Total	"																

3.a Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab sampling, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0060920

[ ] Outfall Number _____

[ ] Intake (Sample type may be at time of sample)

[ ] Existing Discharge

[x] New Discharge (See the basis for information presented, see page 9 Instructions for Question V)

SWRO 3

	1. POLLUTANT GROUP A	2. LEVEL PRESENT							3. UNITS	
		a. Maximum Daily Value*		b. Maximum 30 Day Value (if available)**		c. Long Term Avgs. Value (if available)***		d. No. of Analyses	e. Concentration	f. Mass
		(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass			
1U	Biochemical Oxygen Demand, (BOD)	0.7		- - - -		- - - -		1	mg/l	
2U	Chemical Oxygen Demand, (COD)	14		- - - -		- - - -		1	mg/l	
3U	Total Organic Carbon, (TOC)	3.3		- - - -		- - - -		1	mg/l	
4U	Total Suspended Solids, (TSS)	9		- - - -		- - - -		1	mg/l	
5U	Total Dissolved Solids, (TDS)	70		- - - -		- - - -		1	mg/l	
6U	Ammonia as N	< 0.5		- - - -		- - - -		1	mg/l	
7U	Oil and Grease	< 1		- - - -		- - - -		1	mg/l	
8U	Bromide	- - - -		- - - -		- - - -		- - - -	- - -	
9U	Chlorine, Total Residual	< 0.01		- - - -		- - - -		1	mg/l	
10U	Temperature (winter)	Ambient	Value	- - - -	Value	- - - -	Value	-	°F	°C
11U	Temperature (summer)	Ambient	Value	- - - -	Value	- - - -	Value	-	°F	°C
12U	pH	7.77 Minimum	7.77 Maximum					1	standard units	standard units

* Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a minimum of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

** Maximum 30 Day Value: Determine the average of all daily values taken during each calendar month and report the highest average.

*** Long Term Average Value: If you monitor more than one daily value for a pollutant, determine the average of all values within the last year and report both the mass and concentration.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009270

[ ] Outfall Number ___

[ ] Intake (Sample type/ify location of sample)

[ ] Existing Discharge

[X] New Discharge (Describe basis for information presented, see page 9 b. Instructions for Question V)
SWRO 1

	POLLUTANT GROUP B	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason						
					a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses			Raw Material	Waste Intermed.	Final	Inter-mediate Product	By Product	Intake Water	Other Explain
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
1M	Color		— —	— —	—				— —	—								
1M	Fecal Coliform *		Colonies/100 ml	909.6	25				1	Col./100 ml								(1)
1M	Fluoride	100	— —	— —	—				— —	—								
1M	Nitrate Nitrite (as N)		— —	— —	— —				— —	—								
1M	Nitrogen, Total Organic (as N) **		NH_3=500 TKN=100	151.2 150.2	400				1	ug/l								(1)
1M	Phosphorus (as P), Total		10	365.3	320				1	ug/l								(1)
1M	Sulfate (as SO_4)	1,000	— —						— —	—								
1M	Sulfide (as S)	1,000		— —						—								
1M	Sulfite (as SO_3)	2,000	— —	— —	—				— —	—								
1M	Surfactants (MBAS)	25	— —	— —	— —				— —	—								

3.a Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a minimum of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

(1) Plant laydown area and/or naturally occurring material.

* Tested per Standard Methods for the Examination of Water and Wastewater.

** TON = NH_3 + TKN.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

[ ] Outfall Number _____ [ ] Intake (Specify location of sample)

[ ] Existing Discharge [X] New Discharge (Check the basis for information presented, see page 3 b instructions for Question V)

SWRO 3

	POLLUTANT GROUP B (continued)	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	3. Level Present a. Max Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: How Received	Waste Treated	Manufactured	Intake (Optional)	By Treatment	Intake Water	Other (Explain)
1M	Antimony, Total	300	----	----	--				---	---								
2M	Arsenic, Total	50	0.1	206.2	2				1	ug/l				X				(1)
3M	Beryllium, Total	5	----	----	--				----	--								
4M	Cadmium, Total	5	0.1	213.2	0.2				1	ug/l				X				(1)
5M	Chromium, Total	50	10	200.7	< 10				1	ug/l								
6M	Chromium, Hexavalent	10	----	----	--				--	--								
7M	Copper, Total	20	10	200.7	< 10				1	ug/l								
8M	Lead, Total	100	1	239.2	3				1	ug/l				X				(1)
9M	Mercury, Total	0.2	----	----	--				--	--								
10M	Nickel, Total	40	1	249.2	2				1	ug/l				X				(1)
11M	Selenium, Total	75	----	----	--				--	--								
12M	Silver, Total	10	----	----	--				--	--								
13M	Thallium, Total	100	----	----	--				--	--								
14M	Zinc, Total	5	10	200.7	30				1	ug/l				X				(1)
15M	Cyanide, Total	20	5	SW 846 -9012	< 5				1	ug/l								
16M	Cyanide, Free	5	5	335.2	< 5				1	ug/l								

3.a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

(1) Plant laydown area and/or naturally occurring material.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

[ ] Outfall Number ____

[ ] Intake (Sample taken at location of intake)

[ ] Existing Discharge

[X] New Discharge (See the basis for submission presented, see page 9 of instructions for Question V)

SWRO 3

	POLLUTANT GROUP B (continued)	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present a. Maximum Daily Value: Concentration	3. Level Present a. Maximum Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Raw Material	By-Product	Mineral	Intake Water	Other Explanation
1M	Arsenic, Total	5	5	SW 846 -9066	< 5				1	ug/l							
2M	Aluminum, Total	100	100	200.7	200				1	ug/l			X				(1)
3M	Barium, Total	100	----	----	---				----	---							
4M	Beryllium, Total	100	100	200.7	<100				1	ug/l							
5M	Cadmium, Total	60	0.1	219.2	1				1	ug/l			X				(1)
6M	Chromium, Total	30	10	200.7	330				1	ug/l			X				(1)
7M	Iron, Total	30	10	200.7	< 10				1	ug/l							
8M	Iron, Dissolved	30	100	200.7	2600				1	ug/l			X				(1)
9M	Magnesium, Total	20											X				(1)
10M	Molybdenum, Total	100	1	246.2	1				1	ug/l							
11M	Manganese, Total	10	10	200.7	30				1	ug/l			X				(1)
12M	Tin, Total	200	1	282.2	< 1				1	ug/l							
13M	Titanium, Total	100	----	----	--				----	--							

3.a Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentrations found in at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

(1) Plant laydown area and/or naturally occurring material.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

☐ Outfall Number _____ ☐ Intake Sample (specify location of sample)

☐ Existing Discharge ☒ New Discharge (describe basis for submissions presented, see page 9 of instructions for Question V)

SWRO 3

NOT REQUIRED

	POLLUTANT GROUP C-1 Volatile Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration / Mass	3. Level Present b. Average of Analyses: Concentration / Mass	3. Number of Analyses	4. Units: Concentration / Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Raw Material / Manufacturing / Byproduct / Contaminant / Product / Intake Water / Other (explain)
1V	Acrolein	10							
2V	Acrylonitrile	10							
3V	Benzene	10							
4V	Bromoform	10							
5V	Carbon Tetrachloride	10							
6V	Chlorobenzene	10							
7V	Chlorodibromomethane	10							
8V	Chloroethane	10							
9V	2-Chloroethylvinyl Ether	10							
10V	Chloroform	10							
11V	Dichlorobromomethane	10							
12V	Dichlorodifluoromethane	10							
13V	1,1 Dichloroethane	10							
14V	1,2 Dichloroethane	10							
15V	1,1 Dichloroethylene	10							
16V	1,2 Dichloropropane	10							
17V	1,3 Dichloropropylene	10							
18V	Ethylbenzene	10							

a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS fraction pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number (if known): PA 0009920

☐ Outfall Number _____ ☐ Intake (Sample (specify location of sample)

☐ Existing Discharge ☒ New Discharge (Base the basis for information presented, see page V-1 instructions for Question V)

SWRO 3

NOT REQUIRED

	POLLUTANT GROUP C-1 Volatile Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max. Daily Value: Concentration (if available)	a. Max. Daily Value: Mass	b. Average of Analyses: Concentration (if available)	b. Average of Analyses: Mass	c. Number of Analyses	4. Units: Concentration (if available)	4. Units: Mass	5. If you have any reason to expect the pollutant to be reasonably present in this discharge, check the appropriate box(es) to indicate another reason: Raw Material Use	Manufacturing Process	Product	Intermediate Product	By-Product	Intake Water	Other (Explain)
20V	Methyl Bromide	10																
21V	Methyl Chloride	10																
22V	Methylene Chloride	10																
23V	1,1,2,2 Tetrachloroethane	10																
24V	Tetrachloroethylene	10																
25V	Toluene	10																
26V	1,2 Trans Dichloroethylene	10																
27V	1,1,1 Trichloroethane	10																
28V	1,1,2 Trichloroethane	10																
29V	Trichloroethylene	10																
31V	Vinyl Chloride	10																

1.a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in at least four grab samples taken over the operating hours of the facility during a 24 hour period.

1.b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS fraction pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

[ ] Outfall Number _____ [ ] Intake (sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (describe basis for information presented, see page 9 b Instructions for Question V)

SWRO 3

NOT REQUIRED

	POLLUTANT GROUP C-2 Acid-Fraction Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses			Raw Material	Mass Factored	Diluted	Inter-mediate Product	By Product	In the Water	Other (explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
1A	2-Chlorophenol	10																
2A	2,4-Dichlorophenol	10																
3A	2,4-Dimethylphenol	10																
4A	4,6-Dinitro-o-Cresol	10																
5A	2,4-Dinitrophenol	50																
6A	2-Nitrophenol	10																
7A	4-Nitrophenol	50																
8A	p-Chloro-m-Cresol	10																
9A	Pentachlorophenol	50																
10A	Phenol	10																
11A	2,4,6-Trichlorophenol	10																

3.a Maximum Daily Value Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses Determine the average of all samples taken within the past year, and report both mass and concentration.

** See footnote to Item 5a Question VI with regard to GC/MS fraction pollutants.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

[ ] Outfall Number

[ ] Intake Sample (specify location of sample)

[ ] Existing Discharge

[X] New Discharge (Use the basis for information presented, see page 9 instructions for Question V)

SWRO 3

NOT REQUIRED

	POLLUTANT (GROUP C-2 Base-Neutral Fraction Organics**)	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	3. Level Present a. Max Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: New Material	Mass Increased	Mineral	Other Undesirable Product	By Product	Inadequate Water	Other (Explain)
1B	Acenaphthene	10																
2B	Acenaphthylene	10																
3B	Anthracene	10																
4B	Benzidine	50																
5B	Benzo(a) Anthracene	10																
6B	Benzo(a) Pyrene	10																
7B	3,4 Benzo fluoranthene	10																
8B	Benzo(ghi) Perylene	10																
9B	Benzo(k) Fluoranthene	10																
10B	Bis(2-Chloro-ethoxy) Methane	10																
11B	Bis(2-Chloroethyl) Ether	10																
12B	Bis(2-Chloro-isopropyl) Ether	10																
13B	Bis(2-Ethylhexyl) Phthalate	10																
14B	4-Bromophenyl Phenyl Ether	10																

1.a. Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

1.b. Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS 5 peak pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

[ ] Outfall Number _____ [ ] Intake (Sample type only for intake sampling)

[ ] Existing Discharge [X] New Discharge (Describe basis for substantial production, see page 9 Instructions for Question V)

SWRO 3

NOT REQUIRED

	POLLUTANT GROUP C-3 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses									
					Concentration (or other)	Mass	Concentration (or other)	Mass		Concentration (or other)	Mass	Base Neutral	Known Fraction	Believed	Believed Absent	No Analysis	Intake Water	Other Explain
1626	Butyl Benzyl Phthalate	10																
1636	2 Chloronaphthalene	10																
1706	4 Chlorophenyl Phenyl Ether	10																
1811	Chrysene	10																
1981	Dibenzo(a,h) Anthracene	10																
2081	1,2 Dichlorobenzene	10																
2191	1,3 Dichlorobenzene	10																
2281	1,4 Dichlorobenzene	10																
2301	3,3' Dichlorobenzidine	50																
2451	Diethyl Phthalate	20																
2461	Dimethyl Phthalate	20																
2611	Di N Butyl Phthalate	20																
2731	2,4 Dinitrotoluene	10																
2891	2,6 Dinitrotoluene	10																
2911	Di N Octyl Phthalate	20																
3051	1,2 Diphenylhydrazine (as Azobenzene)	10																

1.a. Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a minimum of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

1.b. Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 peak pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (describe the basis for information presented, see page 9 b Instructions for Question V)

SWRO 3

NOT REQUIRED

	POLLUTANT GROUP C-3 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max. Daily Value: Concentration	3. Level Present a. Max. Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to suspect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
3A	Phenanthrene	10																	
3B	Pyrene	10																	
3C	Hexachlorobenzene	10																	
3D	Hexachlorobutadiene	10																	
3E	Hexachloro-cyclopentadiene	10																	
3F	Hexachloroethane	10																	
3G	Indeno (1,2,3-cd) Pyrene	10																	
3H	Isophorone	10																	
3I	Naphthalene	10																	
3J	Nitrobenzene	10																	
3K	N Nitrosodi-methylamine	20																	
3L	N Nitrosodi-N-Propylamine	20																	
3M	N Nitrosodi-phenylamine	20																	
3N	Phenanthrene	10																	
3O	Pyrene	10																	
3P	1,2,4 Trichlorobenzene	10																	

3.a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b. Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS fraction pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (describe basis for information presented, see page 9 Instructions for Question V)

SWRO 3

NOT REQUIRED

	POLLUTANT GROUP C-4 Pesticides**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	3. Level Present a. Max Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Raw Material	Mass Intermediate	Mass Final	Intake (with Intake Product)	By Product	Intake Water	Other (describe)
1P	Aldrin	10															
2P	Alpha BHC	10															
3P	Beta BHC	10															
4P	Gamma BHC	10															
5P	Delta BHC	10															
6P	Chlordane	10															
7P	4,4' DDT	10															
8P	4,4' DDE	10															
9P	4,4' DDD	10															
10P	Dieldrin	10															
11P	Alpha Endosulfan	10															
12P	Beta Endosulfan	10															
13P	Endosulfan Sulfate	10															
14P	Endrin	10															
15P	Endrin Aldehyde	10															
16P	Heptachlor	10															
17P	Heptachlor Epoxide	10															
18P	Toxaphene	10															
19P	2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN (TCDD)																

1a. Maximum Daily Value. Report the highest daily value from the test year or data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a minimum of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

1b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS 5 peak pollutants.

* Analysis for Dioxin is not required unless you response to Question VI B indicates a need to do such testing.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0000000

[ ] Outfall Number _____ [ ] Intake (Sample upstream of any discharge)

[ ] Existing Discharge [X] New Discharge (Describe basis for information presented, see page V-1 Instructions for Question V)

SWRO 3

	POLLUTANT GROUP B PCB's**	1. Minimum Acceptable Detection Level (ug/l)	2. Detection Level Used (ug/l)	3. EPA Method Number Used	4. Level Present a. Max Daily Value		b. Average of Analyses		c. Number of Analyses	5. Units		6. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason						
					Concentration (or other)	Mass	Concentration (or other)	Mass		Concentration (or other)	Mass	Raw Material	Manufactured	Byproduct	Intermediate Product	By Product	Finished Waste	Other (Explain)
181*	PCB 1242	20																
185*	PCB 1254	20																
188*	PCB 1221	20																
191*	PCB 1232	20																
195*	PCB 1248	20																
201*	PCB 1260	20																
242*	PCB 1016	20																

3 a. Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least hour grab samples taken over the operating hours of the facility during a 24 hour period.

3 b. Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

** New instructions for Question V1 with regard to GC/MS fresh pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (describe basis for information presented, see page 9 b Instructions for Question V)

SWRO 3

NOT REQUIRED

	POLLUTANT GROUP K Radioactivity	Minimum Acceptable Detection Level (pg/l)	1. Detection Level Used (pg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses			Raw Material	Waste Treatment	Treatment	Treatment Residue (Product)	By Product	Intake Water	Other (Explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
1K	Radioactivity: (1) Alpha, Total	Not Available																
2K	(2) Beta, Total	"																
3K	(3) Radium, Total	"																
4K	(4) Radium 226, Total	"																

1.a Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow-weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

1.b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake (Sample type & location of sample)

[ ] Existing Discharge [X] New Discharge (Base the basis for information presented, see page 9 b Instructions for Question V)

SWRO 4

	1. POLLUTANT GROUP A	2. LEVEL PRESENT							3. UNITS	
		a. Maximum Daily Value*		b. Maximum 30 Day Value (if available)**		c. Long Term Avgs. Value (if available)***		d. No of Analyses	a. Concentration	b. Mass
		(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass			
10	Biochemical Oxygen Demand, BOD	< 0.5		----		----		1	mg/l	
20	Chemical Oxygen Demand, COD	9		----		----		1	mg/l	
30	Total Organic Carbon, TOC	0.8		----		----		1	mg/l	
61	Total Suspended Solids, TSS	51		----		----		1	mg/l	
54	Total Dissolved Solids, TDS	42		----		----		1	mg/l	
11	Ammonia as N	< 0.5		----		----		1	mg/l	
74	Oil and Grease	< 1		----		----		1	mg/l	
35	Bromide	----		----		----		----	----	
19	Chlorine, Total Residual	< 0.01		----		----		1	mg/l	
10F	Temperature winter	Ambient	Value	----	Value	----	Value	----	°C	°C
11F	Temperature summer	Ambient	Value	----	Value	----	Value	----	°C	°C
12N	pH	8.31	8.31					1	standard units	standard units
		Minimum	Maximum							

* Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a mixture of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

** Maximum 30 Day Value: Determine the average of all daily values taken during each calendar month and report the highest average.

*** Long Term Average Value: If you measure more than one daily value for a pollutant, determine the average of all values within the last year and report both the mass and concentration.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake (Sample type/specify location of sample) _____

[ ] Existing Discharge [X] New Discharge (Describe basis for information presented, see page 9 b. Instructions for Question V) SWRO 4

	POLLUTANT GROUP B	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max. Daily Value: Concentration	3. Level Present a. Max. Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason: Raw Material	Intermediate Product	By-Product	Finished Product	Waste Constituent	Other (Explain)
1M	Color		----	----	---				----	---								
2M	Fecal Coliform *		Colony/100 ml	909.6	2250				1	Col./100 ml								(1)
3M	Fluoride	100	----	----	---				----	---								
4M	Nitrate Nitrite as N		----	----	---				----	---								
5M	Nitrogen, Total Organic as N **		NH_3=500 TKN=100	351.2 350.2	300				1	ug/l								(1)
6M	Phosphorus as P, Total		10	365.3	250				1	ug/l								(1)
7M	Sulfate as SO_4	1,000	----	----	---				---	---								
8M	Sulfide as S	1,000	----	----	---				---	---								
9M	Sulfite as SO_3	2,000	----	----	---				---	---								
10M	Surfactants (MBAS)	25	----	----	---				---	---								

3.a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

(1) Naturally occurring material

* Tested per Standard Methods for the Examination of Water and Wastewater.

** TON = NH_3 + TKN.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

☐ Outfall Number ____

☐ Intake (See specific requirements for at least one sample)

☐ Existing Discharge

☒ New Discharge (Read the beginning of Section V instructions before proceeding. See page V-1 of instructions for Question V-1)

SWRO 4

	POLLUTANT GROUP B (continued)	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason						
					a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses			Never Detected	Known to be Present	Believed Present	Believed Present in Trace Amounts	Expected to Be Present	Suspected Water Treatment Chemical	Other (Explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
1B	Antimony, Total	200	----	----	---				---	---								
2B	Arsenic, Total	50	0.1	206.2	< 1				1	ug/l								
3B	Beryllium, Total	5	----	----	---				---	---								
4B	Cadmium, Total	5	0.2	210.1	0.4				1	ug/l								(1)
5B	Chromium, Total	50	0.1	213.2	< 10				1	ug/l								
6B	Chromium, Hexavalent	10	----	----	---				---	---								
7B	Copper, Total	20	10	200.7	< 10				1	ug/l								
8B	Lead, Total	100	1	239.2	17				1	ug/l								(1)
9B	Mercury, Total	0.2	----	----	---				---	---								
10B	Nickel, Total	40	1	249.2	2				1	ug/l								(1)
11B	Selenium, Total	75	----	----	---				---	---								
12B	Silver, Total	10	----	----	---				---	---								
13B	Thallium, Total	100	---	----	---				---	---								
14B	Zinc, Total	5	10	200.7	20				1	ug/l								(1)
15B	Cyanide, Total	20	5	SW 846 -9012	< 5				1	ug/l								
16B	Cyanide, Free	5	5	335.2	< 5				1	ug/l								

2a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

2b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

(1) Plant yard and naturally occurring material

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

☐ Outfall Number _____

☐ Intake Sample (specify location of sample)

☐ Existing Discharge

☒ New Discharge (does the basis for information presented, see page V-1 instructions for Question V)
SWRO 4

	POLLUTANT GROUP B (continued)	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max. Daily Value Concentration	3. Level Present a. Max. Daily Value Mass	3. Level Present b. Average of Analyses Concentration	3. Level Present b. Average of Analyses Mass	3. Level Present c. Number of Analyses	4. Units Concentration	4. Units Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason. Raw Material	Made Intermediate	Product	Taken into Product	By-Product	Taken into Water	Other (Explain)
17B	Phenols, Total	6	5	SW 420 -9066	<5				1	ug/l								
18B	Aluminum, Total	100	100	200.7	900				1	ug/l								(1)
19B	Barium, Total	100	----	----	---				---	---								
20B	Boron, Total	100	100	200.7	<100				1	ug/l								
21B	Cobalt, Total	50	0.1	219.2	2				1	ug/l								(1)
22B	Iron, Total	30	10	200.7	1530				1	ug/l								(1)
23B	Iron, Dissolved	30	10	200.7	< 10				1	ug/l								
24B	Magnesium, Total	30	100	200.7	1800				1	ug/l								(1)
25B	Molybdenum, Total	100	1	246.2	<1				1	ug/l								
26B	Manganese, Total	10	10	200.7	70				1	ug/l								(1)
27B	Tin, Total	500	1	282.2	<1				1	ug/l								
28B	Titanium, Total	600	----	----	---				---	---								

3.a. Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

3.b. Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

(1) Plant yard and naturally occurring

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

☐ Outfall Number _____ ☐ Intake Sample (specify location of sample)

☐ Existing Discharge ☑ New Discharge (describe basis for information presented, see page 9 & Instructions for Question V)

SWRO 4

NOT REQUIRED

	POLLUTANT GROUP C-1 Volatile Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value		b. Average of Analyses		c. Number of Analyses	4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason						
					Concentration (or other)	Mass	Concentration (or other)	Mass		Concentration (or other)	Mass	Raw Material	Major Intermediate	Major Final Product	Minor Intermediate, By-Product	By-Product	Intake Water	Other (Explain)
1V	Acrolein	10																
2V	Acrylonitrile	10																
3V	Benzene	10																
5V	Bromoform	10																
6V	Carbon Tetrachloride	10																
7V	Chlorobenzene	10																
8V	Chlorodibromomethane	10																
9V	Chloroethane	10																
10V	2-Chloroethylvinyl Ether	10																
11V	Chloroform	10																
12V	Dichlorobromomethane	10																
14V	1,1-Dichloroethane	10																
15V	1,2-Dichloroethane	10																
16V	1,1-Dichloroethylene	10																
17V	1,2-Dichloropropane	10																
18V	1,3-Dichloropropylene	10																
19V	Ethylbenzene	10																

4a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

4b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 peak pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (Basis for information presented, see page 9 b Instructions for Question V)

SWRO 4

NOT REQUIRED

	POLLUTANT GROUP C-1 Volatile Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value		b. Average of Analyses		c. Number of Analyses	4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate box or describe another reason.						
					Concentration	Mass	Concentration	Mass		Concentration	Mass	Raw Material	Manufactured Product	Byproduct	Intake Water	Other (Explain)		
28V	Methyl Bromide	10																
21V	Methyl Chloride	10																
22V	Methylene Chloride	10																
23V	1,1,2,2 Tetrachloroethane	10																
24V	Tetrachloroethylene	10																
25V	Toluene	10																
26V	1,2 Trans Dichloroethylene	10																
27V	1,1,1 Trichloroethane	10																
28V	1,1,2 Trichloroethane	10																
29V	Trichloroethylene	10																
81V	Vinyl Chloride	10																

a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 peak pollutants.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA

[ ] Outfall Number _____ [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (describe basis for information presented, see page 8 b Instructions for Question V)

SWRO 4

	POLLUTANT GROUP C-2 Acid-Fraction Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses									
					Concentration	Mass	Concentration	Mass		Concentration	Mass	Raw Material	Mass Factored	Solvent	Intermediate Product	By Product	Intake Water	Other (Explain)
1A	2-Chlorophenol	10																
2A	2,4-Dichlorophenol	10																
3A	2,4-Dimethylphenol	10																
4A	4,6-Dinitro-o-Cresol	10																
5A	2,4-Dinitrophenol	50																
6A	2-Nitrophenol	10																
7A	4-Nitrophenol	50																
8A	P-Chloro-m-Cresol	10																
9A	Pentachlorophenol	50																
10A	Phenol	10																
11A	2,4,6-Trichlorophenol	10																

* a. Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

b. Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS 5 peak pollutants.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number

[ ] Intake Sample (specify location of sample)

[ ] Existing Discharge

[X] New Discharge (See the basis for information presented, see page 9 b Instructions for Question V)
SWRO 4

NOTE: READ INSTRUCTIONS BEFORE PROCEEDING

	POLLUTANT GROUP C-3 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (ug/l)	1. Detection Level Used (ug/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value: Concentration	3. Level Present a. Max Daily Value: Mass	3. Level Present b. Average of Analyses: Concentration	3. Level Present b. Average of Analyses: Mass	3. Level Present c. Number of Analyses	4. Units: Concentration	4. Units: Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate blank and describe another reason: Base/Neutral	Mono-functional	Mineral	Total Acid-Base Precursor	Pesticide	Phenolic Water	Other (Explain)
11B	Acenaphthene	10																
21B	Acenaphthylene	10																
31B	Anthracene	10																
41B	Benzidine	50																
51B	Benzo(a) Anthracene	10																
61B	Benzo(a) Pyrene	10																
71B	3,4 Benzo fluoranthene	10																
81B	Benzo(ghi) Perylene	10																
91B	Benzo(k) Fluoranthene	10																
101B	Bis(2 Chloro ethoxy) Methane	10																
111B	Bis(2 Chloroethyl) Ether	10																
121B	Bis(2 Chloro isopropyl) Ether	10																
131B	Bis(2 Ethylhexyl) Phthalate	10																
141B	4 Bromophenyl Phenyl Ether	10																

1.a. **Maximum Daily Value.** Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

b. **Average of Analyses.** Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS fraction pollutants.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (describe basis for information provided, see page 9 instructions for Question V)

SWRO 4

NOT REQUIRED

	POLLUTANT (GROUP C-3 Base-Neutral Fraction Organics**)	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present a. Max Daily Value Concentration	3. Level Present a. Max Daily Value Mass	3. Level Present b. Average of Analyses Concentration	3. Level Present b. Average of Analyses Mass	3. Number of Analyses	4. Units Concentration	4. Units Mass	5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason. Raw Material	Manufacturing	Treatment Chemical	Intermediate Product	By-Product	Intake Water	Other Explain
158	Butyl Benzyl Phthalate	10																
64	2 Chloronaphthalene	10																
47	4 Chlorophenyl Phenyl Ether	10																
81	Chrysene	10																
91	Dibenzo (a,h) Anthracene	10																
28	1,2 Dichlorobenzene	10																
31	1,3 Dichlorobenzene	10																
29	1,4 Dichlorobenzene	10																
38	3,3' Dichlorobenzidine	50																
48	Diethyl Phthalate	20																
50	Dimethyl Phthalate	20																
60	Di N Butyl Phthalate	20																
33	2,4 Dinitrotoluene	10																
34	2,6 Dinitrotoluene	10																
91	Di N Octyl Phthalate	20																
40	1,2 Diphenylhydrazine (as Azobenzene)	10																

4.a Maximum Daily Value: Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

4.b Average of Analyses: Determine the average of all samples taken within the past year, and report both mass and concentration.

** See instructions for Question VI with regard to GC/MS 5 peak pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (does the basis for information presented, see page 9 b Instructions for Question V)

SWRO 4

NOT REQUIRED

	POLLUTANT GROUP C-3 Base-Neutral Fraction Organics**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe the nature reason.						
					a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses			Raw Material	Material Contained	Intermediate	Intermediate Product	Final Product	Intake Water	Other (Explain)
					Concentration	Mass	Concentration	Mass		Concentration	Mass							
1116	Phenanthrene	10																
1201	Pyrene	10																
1389	Hexachlorobenzene	10																
1485	Hexachlorobutadiene	10																
3581	Hexachloro-cyclopentadiene	10																
1681	Hexachloroethane	10																
3791	Indeno (1,2,3-cd) Pyrene	10																
3821	Isophorone	10																
3981	Naphthalene	10																
4005	Nitrobenzene	10																
4539	N Nitrosodimethylamine	20																
4701	N Nitrosodi N-Propylamine	20																
4391	N Nitrosodiphenylamine	20																
4601	Phenanthrene	10																
4581	Pyrene	10																
4891	1,2,4 Trichlorobenzene	10																

4a Maximum Daily Value. Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

4b Average of Analyses. Determine the average of all samples taken within the past year, and report both mass and concentration.

** See Instructions for Question VI with regard to GC/MS 5 peak pollutants.

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number PA 0009920

[ ] Outfall Number _____ [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (does the basis for information presented, see page 9 b Instructions for Question V)

SWRO 4

NOT REQUIRED

	POLLUTANT GROUP C-4 Pesticides**	Minimum Acceptable Detection Level (µg/l)	1. Detection Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses			Raw Material	Waste Treatment	Waste	Intermediate Product	By Product	Intake Water	Other (Explain)
					Concentration or others	Mass	Concentration or others	Mass		Concentration or others	Mass							
11*	Aldrin	10																
29*	Alpha BHC	10																
30*	Beta BHC	10																
48*	Gamma BHC	10																
54*	Delta BHC	10																
46*	Chlordane	10																
7*	4,4' DDT	10																
8*	4,4' DDE	10																
9*	4,4' DDD	10																
10*	Dieldrin	10																
11*	Alpha Endosulfan	10																
12*	Beta Endosulfan	10																
13*	Endosulfan Sulfate	10																
14*	Endrin	10																
15*	Endrin Aldehyde	10																
16*	Heptachlor	10																
17*	Heptachlor Epoxide	10																
25*	Toxaphene	10																
26*	DIOXIN:* 2,3,7,8 Tetrachlorodibenzo P Dioxin																	

3.a Maximum Daily Value Report the highest daily value from the last year of data For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period

3.b Average of Analyses Determine the average of all samples taken within the past year and report both mass and concentration

** See Instructions for Question VI with regard to GC/MS 5 peak pollutants

* Analysis for Dioxin is not required unless your response to Question VI H indicates a need to do such testing

V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

[ ] Outfall Number _____ [ ] Intake Sample (specify location of sample)

[ ] Existing Discharge [X] New Discharge (describe basis for information presented, see page 9 & Instructions for Question V)
SWRO 4

NOT REQUIRED

	POLLUTANT GROUP D PCB's**	Minimum Acceptable Detection Level (µg/l)	1. Better than Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
					a. Max Daily Value		b. Average of Analyses		c. Number of Analyses									
					Concentration	Mass	Concentration	Mass		Concentration	Mass	Raw Material	Mass factored	Intended	Intermediate Product	By Product	Intake Water	Other (Explain)
181*	PCB 1242	20																
191*	PCB 1254	20																
201*	PCB 1221	20																
211*	PCB 1232	20																
221*	PCB 1248	20																
231*	PCB 1260	20																
241*	PCB 1016	20																

3.a Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the arithmetic or flow weighted total mass or average concentration found in a series of at least hour grab samples taken over the operating hours of the facility during a 24 hour period.

3.b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

** New Instructions for Question V! with regard to GC/MS 6 pack pollutants.

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V. ANALYSIS OF EFFLUENT/INTAKE QUALITY - INDUSTRIAL WASTEWATER

NPDES Number: PA 0009920

[ ] Outfall Number _____

[ ] Intake Sample (specify location of sample)

[ ] Existing Discharge

[X] New Discharge (Once the basis for information presented, see page V-1 instructions for Question V)

SWRO 4

NOT REQUIRED		POLLUTANT GROUP K Radioactivity	Minimum Acceptable Detection Level (µg/l)	1. Reporting Level Used (µg/l)	2. EPA Method Number Used	3. Level Present					4. Units		5. If you have any reason to expect the pollutant to be normally present in this discharge, check the appropriate block or describe another reason.						
						a. Max. Daily Value		b. Average of Analyses		c. Number of Analyses			Raw Material	Mass Factored	Solvent	Intermediate Product	By Product	Intake Water	Other (Explain)
						Concentration (or other)	Mass	Concentration (or other)	Mass		Concentration (or other)	Mass							
		Radioactivity:																	
	1K	(1) Alpha, Total	Not Available																
	2K	(2) Beta, Total	"																
	3K	(3) Radium, Total	"																
	4K	(4) Radium 226, Total	"																

1.a Maximum Daily Value - Report the highest daily value from the last year of data. For composite samples, this value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period. For grab samples, this value is the maximum or flow weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

1.b Average of Analyses - Determine the average of all samples taken within the past year, and report both mass and concentration.

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
	Section A: Water Conditioning Chemical Additives			
DSN 001	Boric Acid Boron	Used for Reactor Coolant System (RCS) chemical shim. Routine: RCS treated by Radwaste System which discharges through DSN 001. Non-Routine: Primary to Secondary System leakage discharge via IWTS (DSN 701) to DSN 001. Note: In accordance with PaDER letter dated August 23, 1982 Boron levels are maintained at below 25 ppm Boron as a permit maximum during nonroutine plant leakage (see attached letter, page 125).	<5000 <25000	5000 5000
	Lithium Hydroxide Lithium	Used in RCS for pH control. Routine: RCS treatment by Radwaste System which discharges through DSN 001. Non-Routine: Primary to Secondary System leakage discharge via IWTS (DSN 701) to DSN 001.	<50 (no impact on DSN 001 pH) <50 (all IWTS discharges at pH 6 to 9)	50 50

* See attached chemical substance MSDSs.

** Analytical detection level refers to routine plant procedures.

NPDES NUMBER PA 0009920

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
DSN 001 (cont'd)	Hydrazine Hydrazine	Used for RCS oxygen control. Used for Secondary System oxygen control. System leakage and system draindown via IWTS (DSN 701) to DSN 001. (See additional discussions, Section VII, pg. 127).	<10	10
	Morpholine Morpholine	Used for Secondary System pH control. System leakage and system draindown via IWTS (DSN 701) to DSN 001.	<500	500
	Ammonium Hydroxide Ammonia-Nitrogen	Used for pH control during normal operations and during system layup in outages. Chemical is also present in feed water as a decomposition product of hydrazine. Discharge via IWTS (DSN 701) to DSN 001.	<100 (See Section V, DSN 001, Nitrogen Compounds; All IWTS discharges maintained at pH 6 to 9)	100
	CONT'D ON PAGE 115A			

* See attached chemical substance MSDSs.
** Analytical detection level refers to routine plant procedure.

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
DSN 001 (cont'd)	Sodium Hypochlorite	Used as a biocide within the Circulating, River, Sewage Treatment and Domestic Water Systems. Used to neutralize hydrazine. Used in Pretreatment System for iron removal. Discharged either directly or via Circulating Water System blowdown or IWTS (DSN 701) to DSN 001. (See additional discussion, Section VII, pg. 128).	<200 (As free chlorine)	100

* Per attached chemical substance MSDSs.

** Analytical detection level refers to routine plant procedure.

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL DETECTION LEVEL (ug/l)
DSN 001. (cont'd)	Betz C-78P Bromo-Chloro-Dimethylhydantoin	Used as a biocide within the river water system. Discharged directly via DSN 001. (PaDER letter dated May 8, 1992 established discharge limitations for total residual oxidants associated with Betz C-78P use)	<140 Daily Average (As total residual oxidant)	10

NPDES NUMBER PA 0009920

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY AND OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully, and use the tabular format and additional pages, where necessary, to present the required information).

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
DSN 001 (cont'd)	Chlorine (gas)	Routinely used as biocide in Sewage Treatment Plant. Discharged via DSN 101 to DSN 001. May be used as a biocide in the Circulating and River Water Systems. If used, it would be discharged directly or via the Circulating Water System blowdown to DSN 001. (See additonal discussion, Section VII, pg. 126).	<200 (As free	100 chlorine)
	Sulfuric Acid	Used for pH control in Circulating Water System, IWTS and Radwaste System. Also used for demineralizer regeneration. Discharged either directly or via Circulating Water System blowdown, IWTS (DSN 701), Secondary Neutralizer Tank (DSN 501) or Radwaste System to DSN 001.	Variable (Section V, DSN 001, sampling indicates net sulfate concentration of -9,400 to +27,400 ug/l; See other Section V, DSN 001.	500
	Cont'd on Page 116A			

* See attached chemical substance MSDSs.
** Analytical detection level refers to routine plant procedures.

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY AND OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE.

(Read instructions carefully, and use the tabular format and additional pages, where necessary, to present the required information.

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
DSN 001 (cont'd)	Nalco 41-L Petroleum Distillates, n-Butyl alcohol, Ethoxylated Octyl Phenyl.	Used for corrosion control in Closed Cooling Water Systems and the Reactor Building Emergency Cooling Water System (RBECWS). May be discharged directly via DSN 001 as the result of tube leakage, RBECWS actuation and NRC required testing and surveillance of the RBECWS. May be discharged via IWTS (DSN 701) and the Liquid Radwaste System to DSN 001 as a result of system draining for maintenance, testing and surveillance, and due to plant equipment and component leakage. Normal system leakage discharged via IWTS (DSN 701) or Radwaste System to DSN 001.	Trace (may contribute to DSN 001 Total Organic Carbons (TOC), Section V sampling indicates net TOC change 900 to 1600 ug/l.	0.1 fl. oz. Nalco 41 per gallon effluent (product vendor detection limit equivalent to 780,000 ug/l.
	Molybdate/Nitrite Corrosion Inhibitor Potassium Molybdate Potassium Nitrite Sodium Molybdate Sodium Nitrite Sodium Hydroxide	Used for corrosion control in Closed Cooling Water Systems and the Reactor Building Emergency Cooling Water System similiar to Nalco 41-L. See Nalco 41-L discussion above for more information.	See GPUN Letter No. C331-92-2014 (Dated April 13, 1992) for estimated molybdate/ nitrite corrosion inhibitor discharge concentrations.	

* See attached chemical substance MSDSs.

** Analytical detection level referes

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
DSN 001 (cont'd)	pHreeguard 2350 (or equivalent) Ethylene Glycol Sodium Hydroxide	Used for corrosion and scale control in Reactor Building Industrial Coolers. Normal blow-down during operations and maintenance activities via IWTS (DSN 701) to DSN 001.	<1000 Ethylene Glycol (current agreement with PaDER requires Ethylene Glycol monitoring for pHreeguard use)	1000
	Sodium Hydroxide Sodium	Used for pH control in the Circulating Water System, Sewage Treatment Plant (DSN 101), Secondary Neutralization Tank (DSN 501), IWTS (DSN 701), and IWFS (DSN 401). Also used as a regenerate for the Illinois Water Treatment System resins. Discharge from these various systems via DSN 001.	Variable (Net DSN 001 Sodium concentrations not available, effluent pH maintained at 6 to 9 or within ambient conditions).	100
	Polymer CT 6906 Polymer CT 6528 (or equivalent) Organic Polymers	Used as a flocculant aid for solids removal in the IWTS (DSN 701). Discharged via IWTS (DSN 701) to DSN 001.	Trace (May contribute to DSN 001 Total Organic Carbon (TOC). Section V sampling indicates net TOC range 900 to 1600 ug/l)	N/A

* See attached chemical substance MSDSs.

** Analytical detection level refers to routine plant procedures.

NPDES Number PA 0009920

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
DSN 001 (cont'd)	Aero-Froth 65 (or equivalent) Organic Compounds	Occasional use in the IWTS to aid in the separation of water and oil. Discharged via IWTS (DSN 701) to DSN 001.	Trace (May contribute to DSN 001 TOC, Section V sampling indicates net TOC range 900 to 1600 ug/l).	N/A
	Unifloc 435 (or equivalent) Organic Polymer	Used as a flocculant aid for solids removal in the Water Pretreatment System. May be discharged via IWFS (DSN 401) to DSN 001.	Trace (May contribute to DSN 001 TOC, Section V sampling indicates net TOC range 900 to 1600 ug/l).	N/A
	Chemtek 6101 (or equivalent) Cationic Organic Polymer	Used as a flocculant aid for solids removal at the Sewage Treatment Plant (DSN 101). Discharged via DSN 101 to DSN 001.	Trace (May contribute to DSN 001 TOC, Section V sampling indicates net TOC range 900 to 1600 ug/l).	N/A
	Chemtek 6034 (or equivalent) Aluminum Chloride/ Cationic Organic Polymer Blend	Used as flocculant aid for solids removal and for phosphate precipitation at the Sewage Treatment Plant (DSN 101). Discharged via DSN 101 to DSN 001.	Trace (May contribute to DSN 001 TOC net increase and/or DSN 001 aluminum net increase. See Section V sampling results).	N/A

* See attached chemical substance MSDSs.

** Analytical detection level refers to routine plant procedures.

NPDES Number PA 0009920

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
DSN 001 (cont'd)	SAG - 10 and SAG 2001 (or equivalent) Organic Silicate Compound	Used as an anti-foam agent in the IWTS process (DSN 701) and in the Radwaste System evaporator. Discharged via IWTS (DSN 701) and Radwaste System to DSN 001.	Trace (May contribute to DSN 001 TOC. See Section V sampling results).	N/A
	Sawdust	Used when needed in the Circulating Water System to prevent in-leakage from the Circulating Water System to the Secondary Feedwater/Condensate System. Per agreement with PaDER, GPUN will conduct a study to attain the optimal usage rate of sawdust during the next period of usage. Sawdust not routinely used. Sawdust only used when excessive leakage rates cause Secondary Plant Water out-of-specification condition. Discharged via Circulating Water System blowdown to DSN 001.	Variable (As TSS) (Current agreement with PaDER restricts sawdust addition to 2500 lbs/week).	N/A

* See attached chemical substance MSDSs.

** Analytical detection level refers to routine plant procedures.

NPDES Number PA 0009920

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
DSN 001 (Cont'd)	Betz CT-1/C-74 Ethylene Glycol Alkyl Dimethyl Benzyl Ammonium Chloride Isopropyl Alcohol Dodecylguanidine Hydrochloride Ethyl Alcohol	Betz CT-1 and Betz C-74 are the same product. Betz C-74 regularly used as a biocide in the TMI-1 Circulating Water System. Betz CT-1 typically used three times per year in the River Water System as a molluscicide. Discharged via Circulating Water System blowdown or directly to DSN 001.	< 200 (As active CT-1/C-74)	200
	Betz DTS (or equivalent) Sodium Montorillonite Tridymite Cristobalite	Used as a detoxifying agent for Betz CT-1. Betz DTS typically used three times per year during periods of Betz CT-1 use in the River Water System. One part Betz DTS added to one part Betz CT-1 to accomplish neutralization prior to discharge. Typically, 15 ppm DTS added to River Water System to neutralize 15 ppm CT-1/C-74 prior to discharge to DSN 001.	15,000 (As neutralized CT-1/C-74/DTS complex)	N/A

* See attached chemical substance MSDSs.

** Analytical detection level refers to routine plant procedures.

NPDES NUMBER PA 0009920

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE.

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information).

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
DSN 001 (cont'd)	Hydrogen Peroxide	Used to neutralize hydrazine discharged via IWTS (DSN 701) to DSN 001.	Non-detectable (Reaction products are nitrogen gas and water.	N/A
	Acco Floc 350 (or equivalent) Bentonite Clay	Used as a flocculant aid for solids removal in the Water Pretreatment System may be discharged via IWFS (DSN 401) to DSN 001.	Trace (May contribute to DSN 001 TSS loading)	N/A

* See attached chemical substance MSDSs.
** Analytical detection level refers to routine plant procedures.

NPDES Number PA 0009920

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
DSN 001 (cont'd)	Section B: Dioxin Not applicable			
	Section C: Table 3 Subetances Numerous Table 3 substances are used on site and could be discharged through DSN 001. These substances are typically used in small quantities for chemical laboratory analyses and would be present in trace amounts only. Completed Section V sampling and analyses effectively address these substances.			
	Section C: Table 4 Subetances Asbestos	TMI Natural Draft Cooling Towers are constructed with asbestos cement boards (ACBs). Trace amounts of asbestos fibers may be present in the Circulating Water System due to normal ACB degradation. Circulating Water System blowdown to DSN 001.	0.08 million structures/l (DSN 001 concentration based on Circulating Water System sample. No asbestos water quality standard exists, however, EPA drinking water proposed MCL is 7 million fibers per liter. The term 'structures' includes fibers and other asbestos.)	0.192 million structures/l
	Section D: GC/MS 5 Peaks and Other Chemicals No additional volatile organic peaks identified by GC/MS scan.			

* See attached chemical substance MSDSs.

** Analytical detection level refers to routine plant procedures.

NPDES Number PA 0009920

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EIPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
DSN 005	Section A: Water Conditioning Chemical Additives			
	Chlorine (gas)	May be used as a biocide in the Circulating Water System. May be discharged to DSN 005 via the Yard Drain System during periods of dewatering the Natural Draft Cooling Towers (NDCT). (See Additional discussion, Section VII pg. 126)	<200 (As free chlorine)	100
	Sodium Hypochlorite Free available chlorine	Used as a biocide in the Circulating Water System and for iron removal in the Water Pretreatment System. May be discharged to DSN 005 during dewatering of NDCTs or from flushing Fire Service Systems to the Yard Drain System. (See additional discussion, Section VII pg. 128)	<200 (As free chlorine)	100
	Sulfuric Acid Sulfates	Used for pH control in the Circulating Water System. May be discharged to DSN 005 during dewatering of NDCTs.	Variable (May contribute to net sulfate concentration increase at DSN 005. See Section V sampling results for DSN 005 Sulfur compounds).	500

* See attached chemical substance MSDSs.

** Analytical detection level refers to routine plant procedures.

NPDES NUMBER PA 0009920

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY AND OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED BO BE PRESENT IN THE DISCHARGE.

(Read instructions carefully, and use the tabular format and additional pages, where necessary, to present the required information.

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
DSN 005 (cont'd)	Sawdust	Used when needed in Circulating Water System to prevent in-leakage from Circulating Water System to the Secondary Feedwater/Condensate System. May be discharged via Circulating Water System to DSN 005 when dewatering Natural Draft Cooling Towers.	Variable as TSS	N/A
	Bentonite	Used as a flocculant aid in the Water Pretreatment System. Maybe discharged to DSN 005 during periods of flushing the Fire Service System to the Yard Drainage System.	Trace	N/A
	Sodium Hydroxide	Used for pH control in the Circulating Water System. May be discharged to DSN 005 via yard drainage system during periods of dewatering Natural Draft Cooling Towers.	Trace	N/A

* See attached chemical substance MSDSs.

** Analytical detection level refers to routine plant procedures.

NPDES Number PA 0009920

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
DSN 005 (cont'd)	Betz C-74/CT-1 Ethylene glycol Alkyl Diemthyl Benzyl Ammonium Chloride Isopropyl Alcohol Dodecylguanidine Hydrochloride Ethyl Alcohol	Betz C-74 and CT-1 are the same product. Products are used as a biocide and molluscicide in the Circulating Water System and the Fire Service System. May be discharged to DSN 005 when dewatering the NDCTs or during treatment of Fire Service System.	<200 (As active Betz CT-1/C-74)	200
	Unifloc 435 (or equivalent) Organic Polymer	Used as a flocculant aid in the Water Pretreatment System. May be discharged to DSN 005 during periods of flushing the Fire Water System to the Yard Drain System.	Trace (May contribute to DSN 005 TOC concentration).	N/A
	<u>Section B: Dioxin</u> Not applicable			
	<u>Section C: Table 3 Substances</u> Not applicable			

* See attached chemical substance MSDSs.

** Analytical detection level refers to routine plant procedures.

NPDES Number PA 0009920

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
DSN 005 (cont'd)	Section C: Table 4 Substances Asbestos	NDCTs are constructed with asbestos cement boards (ACBs). Trace amounts of asbestos fiber may be present in the Circulating Water System due to normal ACB degradation. NDCTs may be discharged to DSM 005 during periods of dewatering.	0.959 million structures/l (No asbestos water quality standard known, however, EPA drinking water proposed MCL is 7 million fibers per liter. The term 'structures' includes fibers and other asbestos.)	0.192 million structures/l
	Section D: GC/MS 5 Peaks and Other Chemicals Not applicable			

* See attached chemical substance MSDSs.

** Analytical detection level refers to routine plant procedures.

NPDES NUMBER PA 0009920

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY AND OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED BO BE PRESENT IN THE DISCHARGE.

(Read instructions carefully, and use the tabular format and additional pages, where necessary, to present the required information.

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
Intake Structure (De-ice Flow)	Section A: Water Conditioning Chemical Additives		<200	100
	Sodium Hypochlorite, Chlorine (gas) Fee available chlorine	Maybe used as a biocide within the Circulating Water System. May be present in de-ice water diverted from the Circulating Water System to the Intake Structure. Discharges via the River Water System to DSN 001.	(As free at DSN	chlorine 001).
	Sulfuric Acid	Used for pH control in the Circulating Water System. May be present in de-ice water diverted from the Circulating Water System to the Intake Structure. Discharges via the River Water System to DSN 001.	Variable (as sulfates at DSN 001 - See Section V sampling results)	500

* See attached chemical substance MSDSs.

** Analytical detection level refers to routine plant procedures.

NPDES NUMBER PA 0009920

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY AND OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE.

(Read instructions carefully, and use the tabular format and additional pages, where necessary to present the required information.)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
Intake Structure (De-ice Flow)	Sodium Hydroxide Sodium	May be used for pH control in the Circulating Water System. May be present in de-ice water diverted from the Circulating Water System to the Intake Structure Discharge via the River Water System to DSN 001.	Variable (At DSN 001 - See Section V sampling results)	100
	Sawdust	Used when needed in the Circulating Water System to prevent in-leakage from the Circulating Water System to the Secondary System. May be present in de-ice water diverted from the Circulating Water System to the Intake Structure. Discharged via the River Water System to DSN 001.	Variable (As TSS at DSN 001)	N/A
	Betz CT-1/C-74 Ethylene Glycol, Alkyl Dimethyl Benzyl Ammonium Chloride, Isopropyl Alcohol, Dodecylguanidine Hydrochloride, Ethyl Alcohol	Betz CT-1 and Betz CT-74 are the same product. Betz CT-74 used in Circulating Water System as a biocide. May be present in de-ice water diverted from the Circulating Water System to the Intake Structure discharged via the River Water System to DSN 001.	<200 (As active CT-1/ CT-74 at DSN 001)	200

* See attached chemical substance MSDSs.

** Analytical detection level refers to routine plant procedures.

NPDES NUMBER PA 0009920

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY AND OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE.

(Read instructions carefully, and use the tabular format and additional pages, where necessary to present the required information.)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND*	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ug/l)	ANALYTICAL** DETECTION LEVEL (ug/l)
Intake Structure (De-ice Flow)	Section B: Dioxin Not Applicable			
	Section C: Table 3 Substances Not Applicable			
	Section D: Table 4 Substances Asbestos	TMI Natural Draft Cooling Towers are constructed with asbestos comment boards (ACBs). May be present in de-ice water diverted from the Circulating Water System. Discharged via the River Water System to DSN 001.	See DSN 001 Asbestos Discussion, Page 121.	

* See attached chemical substance MSDSs.
** Analytical detection level refers to routine plant procedures.

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (pg/l)	ANALYTICAL DETECTION LEVEL (pg/l)
TMI-1 Intake Structure Screen Wash Water & River Water Chlorination House Floor Drain.	Section A: Water Conditioning Sodium hypochlorite chlorine (gas) Sulfuric Acid Sodium hydroxide Sawdust Betz CT-1/C-74	Chemical Additives Chemicals are potentially present in screen wash water during de-ice water flow to screen intake structure. De-ice flow to intake structure occurs only during winter months. Screen wash water flow is intermittent (i.e., occuring approx 5 minutes every 4 hours). Potential discharge of chemical constituents would only occur during simultaneous de-icing and screen washing operations.	Trace (Intermittent)	N/A

V7 INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (ppb)	ANALYTICAL DETECTION LEVEL (ppb)
TMI-1 Intake Structure Screen Wash Water & River Water Chlorination House Floor Drain.	Section A: Water Conditioning Sodium hypochlorite chlorine (gas) Slimicide C-78P Bromo-chloro-Dimethyl-hydantoin	Chemical Additives Chemicals are potentially present in River Water Chlorination House floor drain discharge related to chemical storage and use. Floor Drain administratively controlled ot prevent releases. Floor drain may be used for housekeeping activities.	Trace	N/A
	Section B: Dioxin Not Applicable			

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (µg/l)	ANALYTICAL DETECTION LEVEL (µg/l)
TMI-1 Intake Structure Screen Wash Water & River Water Chlorination House Floor Drain.	Section C: Table 3 Substances Not Applicable			
	Section D: Table 4 Substances Asbestos	Chemicals are potentially present in screen wash water during de-ice water flow to screen intake structure. De-ice flow to intake structure occurs only during winter months. Screen wash water flow is intermittent (i.e., occurring approx. 5 minutes every 4 hours). Potential discharge of chemical constituents would only occur during simultaneous de-icing and screen washing operations.	Trace (Intermittent)	N/A

VI. INFORMATION AND ANALYSIS OF EFFLUENT QUALITY FOR OTHER POTENTIALLY TOXIC POLLUTANTS KNOWN OR EXPECTED TO BE PRESENT IN THE DISCHARGE

(Read instructions carefully and use the tabular format and additional pages, where necessary, to present the required information)

OUTFALL	CHEMICAL SUBSTANCE OR COMPOUND	REASON FOR PRESENCE IN DISCHARGE	AVERAGE EFFLUENT CONCENTRATION (pg/l)	ANALYTICAL DETECTION LEVEL (pg/l)
TMI-2 Intake Structure Screen Wash Water.	Section A: Table 3 Substances	Not Applicable		
	Section B: Dioxin	Not Applicable		
	Section C: Table 3 Substances	Not Applicable		
	Section D: Table 4 Substances	Not Applicable		

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF WATER QUALITY MANAGEMENT
407 South Cameron Street
Harrisburg, Pennsylvania 17101
(717) 787-9665
August 23, 1982

Industrial Waste
Part I NPDES Permit No. PA0009920
Three Mile Island Station
Londonderry Township
Dauphin County

R.C. Arnold, President
GPU Nuclear
P.O. Box 480
Middletown, PA 17057

Dear Mr. Arnold:

We are confirming your letter of July 7, 1982 which supplies the information on the sources of waste water streams which contain boron. We have reviewed the letter and have found the information to be adequate in responding to our requests.

The limit for boron in outfall 001 shall be in accordance with Special Condition No. 17 of the existing NPDES permit. This restricts the boron to a maximum limit of 25 mg/l.

It would be helpful if you would indicate the boron content in the waste water streams identified in your letter, if this information is presently available.

As indicated in previous conversations, the boron issue will be addressed in the renewal of the NPDES permit.

Sincerely,

James V. Donato, P.E.
Chief, Permits & Grants Section
Harrisburg Regional Office

JVD:wam

Rec'd 8/31/82

ATTACHMENT TO SECTION VI
1991 PERMIT REAPPLICATION
NPDES PERMIT PA 0009920
SEE, BORIC ACID NARRATIVE

NPDES NUMBER PA 0009920

VI. HAZARDOUS SUBSTANCE SPILL REPORTING REQUIREMENT EXEMPTION (OPTIONAL)
(See Instructions)

Name of Table 4 Substance	Outfall	Amount per Outfall			Origin and Source	Treatment Provided		
		Quantity lb/24 hrs.	Frequency	Duration		a	b	c
Chlorine (gas)	DSN 001	Variable	*	*	Chlorine gas may be used in the Circulating Water System and the River Water System as a biocide. When used, total chlorine gas used is approximately 200 lbs/day. Chlorine residue may be discharged either as a Circulating Water System blowdown to DSN 001, as River Water System discharge to DSN 001, or as Circulating Water System discharge to DSN 005 via the Yard Drainage System during Natural Draft Cooling Tower Dewatering. Chlorine gas is normally used at the Sewage Treatment Plant as a biocide. Chlorine residual is discharged to DSN 001 via DSN 101. Chlorine residual is required at DSN 101 to assure compliance with the Sewage Treatment Plant fecal coliform limitations. Chlorine residual at DSN 001 is limited under the current NPDES Permit.		X	
40 CFR 117, RQ=10 lbs	DSN 005							
	DSN 001	3	Daily	Cont.				

* Discharge of detectable chlorine is limited to two (2) hours per day as required by the station NPDES permit.

NPDES Number PA 0009920

VII. HAZARDOUS SUBSTANCE SPILL REPORTING REQUIREMENT EXEMPTION (Optional)

(See Instructions)

1. Name of Table 4 Substance	Outfall	Amount Per Outfall			2. Origin and Source	3. Treatment Provided		
		Quantity lb/24 hrs	Frequency	Duration		a	b	c
Hydrazine 40 CFR 302, RQ = 1 lb.	DSN 001	75	Outages	Intermittent	Hydrazine liquid is used for oxygen control in the Reactor Coolant System and the Secondary System. Current NPDES Permit requires DSN 001 hydrazine concentration to be less than 0.01 mg/l. Normal system leakage may contribute hydrazine to DSN 001 at non-detectable levels. During outages which occur approximately every 24 months, hydrazine (equivalent to approximately 75 lbs.) is used to layup a portion of the Secondary System. Following layup, this higher concentration hydrazine is discharged to the IWTS (DSN 701). Hydrazine is neutralized with sodium hypochlorite at the IWTS and discharged to DSN 001. Hydrazine concentration at DSN 001 is maintained at less than 0.01 mg/l during system draining.		X	

NPDES NUMBER PA 0009920

VII. HAZARDOUS SUBSTANCE SPILL REPORTING REQUIREMENTS EXEMPTION (Optional)

(See Instructions)

Name of Table 4 Substance	Outfall	Amount per Outfall			Origin and Source	Treatment Provided		
		Quantity lb/24 hrs.	Frequency	Duration		a	b	c
Sodium Hypochlorite	DSN 001	450	Daily	Inter-mittent	Sodium hypochlorite may be used in the Circulating Water System, the Sewage Treatment Plant, the River Water System, and the Domestic Water System as a biocide. Sodium hypochlorite is also used in the Pretreatment System for iron removal and at the IWTS for hydrazine neutralization. Total sodium hypochlorite use is estimated at 450 lbs. per day. Chlorine residual may be discharged either as Circulating Water System blowdown to DSN 001, as Fire Service Water (Domestic Water) discharge to DSN 005 via the Yard Drain System, or as Circulating Water System discharge to DSN 005 via the Yard Drain System during Natural Draft Cooling Tower dewaterting. Chlorine residual is maintained within current NPDES Permit limits at DSN 001 and no detectable chlorine residual would be expected at DSN 005.		X	
40 CFR 117, RQ=100 lbs	DSN 005							

EB-8WQ-288.10 (Rev. 12/87)

NPDES Number PA 0009920

VIII. ANTICIPATED ENVIRONMENTAL PROTECTION IMPROVEMENTS OR RELATED CHANGES

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

☐ YES (complete the following table) ☒ NO (go to B)

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. No.	b. Source of Discharge		a. Required	b. Projected

B. OPTIONAL: You may attach additional sheets describing any additional environmental pollution control programs (or other production projects) which may affect your discharges which 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 PROGRAMS IS ATTACHED

See Page 129A.

From Page 129

1. Stabilization and upgrade of site stormwater drainage system in 1992.

2. Change out of corrosion inhibitor Nalco 41-L to a less toxic molybdate-based material.

3. Addition of a drain line from the TMI-1 Secondary Neutralizer Tank (DSN 501). This would divert flow from DSN 501 to the TMI-1 Turbine Building Sump for processing through the IWTS (DSN 701) prior to discharge at DSN 001.

NPDES Number PA 0009920

XI. OTHER INFORMATION

A. For New Dischargers Only ☒ Check if Not Applicable

1. Have there been any technical evaluations performed concerning your anticipated wastewater treatment or control facilities (including engineering reports or pilot plant studies)? Check the appropriate box below.

☐ Yes ☐ No

If yes, briefly describe such evaluations and the resulting reports which have been prepared.

2. Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles your planned operation with respect to items produced, production processes, wastewater constituents or wastewater treatment.

Name	Location

B. For All Dischargers: (Optional)

Use attached sheets to expand upon responses to any of the above Questions I-X, or to call attention to any other information you feel should be considered in establishing permit limitations for the proposed or existing facility.

EPA 3WQ-788.10 (Rev. 1-87)

NPDES Number PA 0009920

IX. BIOLOGICAL TOXICITY TEST DATA

Do you know or have reason to believe that any acute or chronic biological toxicity tests were made in the last three (3) years on any of the activity's discharges, or on a receiving water in relation to a discharge?

☐ Yes ☒ No

If yes, attach any information which you have available on the purpose and nature of such testing, and the test results.

X. CONTRACTED ANALYTICAL ASSISTANCE

Did a contract laboratory or consulting firm perform any of the analyses required by this application?

☒ Yes, their name(s), address(es) and list(s) of the analyses performed are given below ☐ No

Name Lancaster Laboratories, Inc.
Address 2425 New Holland Pike
Lancaster, PA 17601
Phone (717) 656 . 2301

Types of Analyses Performed: PCBs, Volatile Organics, Acid Fraction Organics, Base-Neutral Organics, Nitrogen Compounds, Sulfur Compounds, Cyanides, Phenols and Surfactants

---

Name Teledyne Isotopes
Address 50 Van Buren Ave.
Westwood, NJ 07675
Phone (201) 664 . 7070

Types of Analyses Performed: Radioactivity

Name Johnston Laboratory
Address 4705 E. Trindle Road
Mechanicsburg, PA 17055
Phone (717) 737 . 7136

Types of Analyses Performed: Fecal Colliform, 5-day BOD

ER-BWQ-288.10 (Rev. 12/87)

NPDES Number PA 0009920

XII. CERTIFICATION AND SIGNATURE OF APPLICANT

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

T. G. Broughton

Vice President and Director, TMI-1

Print Name and Title of Person Signing

Sworn and subscribed to before me this 2nd day of October, 19 92

(717) 984-8005

Telephone Number of Person Signing

Erin M. Flowers

Notary Public

Notarial Seal
Erin M. Flowers, Notary Public
Londonderry Twp., Dauphin County
My Commission Expires Sept. 11, 1993
Member, Pennsylvania Association of Notaries

J. G. Broughton

Signature of Applicant

Notary Seal

October 2, 1992

Date Application Signed

Please note below the name, address and telephone number of the individual that should be contacted in the event additional information is required:

Name: Mr. Scott Cogley - Environmental Licensing Engineer

Address: Three Mile Island Nuclear Station

P.O. Box 480 Middletown, PA 17057

Telephone: (717) 948 - 8881

Attachment 2

ACT 14 NOTIFICATIONS

Nuclear

GPU Nuclear Corporation
Post Office Box 480
Route 441 South
Middletown, Pennsylvania 17057-0191
717 944-7621
TELEX 84-2386
Writer's Direct Dial Number

November 26, 1990
C331-90-2114

Board of Supervisors
Londonderry Township
783 Geyer's Church Road
Middletown, Pennsylvania 17057

Dear Supervisors:

Subject: Municipal Notification of Permit Application to the Pennsylvania Department of Environmental Resources (PaDER)

In accordance with Commonwealth of Pennsylvania Act 14, GPUN is providing notification of intent to renew an existing National Pollutant Discharge Elimination System Permit (NPDES Permit No. Pa 0009920). This existing NPDES Permit authorizes the discharge of industrial wastewater from the Three Mile Island Nuclear Station (TMINS) into the Susquehanna River.

Should you have any questions concerning this matter or require additional information, please contact Scott Cogley, TMINS Environmental Licensing Engineer, at (717) 948-8881.

Sincerely,

H. D. Hukill
Vice President and
Director, TMI-1

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

UNITED STATES POSTAL SERVICE

OFFICIAL BUSINESS

SENDER INSTRUCTIONS

Print your name, address and ZIP Code in the space below.

- Complete items 1, 2, 3, and 4 on the reverse.
- Attach to front of article if space permits, otherwise affix to back of article.
- Endorse article "Return Receipt Requested" adjacent to number.

U.S. MAIL

PENALTY FOR PRIVATE USE $300

RETURN TO

Print Sender's name, address, and ZIP Code in the space below

GPU NUCLEAR CORP.

P. O. BOX 480

MIDDLETOWN, PA 17057

Attn: S. Cogley, OSF
C331-90-2114

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. (Extra charge)
2. ☐ Restricted Delivery (Extra charge)

3. Article Addressed to:

Board of Supervisors
Londonderry Twp.
783 Geyer's Church Road
Middletown, PA 17057

4. Article Number
P 826 002 658

Type of Service:
- ☐ Registered
- ☒ Certified
- ☐ Express Mail
- ☐ Insured
- ☐ COD
- ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED

5. Signature – Addressee
X

6. Signature – Agent
X Linda Shuey

7. Date of Delivery
11/29/90

8. Addressee's Address (ONLY if requested and fee paid)

PS Form 3811, Apr. 1989 * U.S.G.P.O. 1989-238-815 DOMESTIC RETURN RECEIPT

GPU Nuclear Corporation
Post Office Box 480
Route 441 South
Middletown, Pennsylvania 17057-0191
717 944-7621
TELEX 84-2386
Writer's Direct Dial Number

November 26, 1990
C331-90-2115

Dauphin County Commissioners
Dauphin County Courthouse
P. O. Box 1295
Harrisburg, Pennsylvania 17108

Dear Commissioners:

Subject: Municipal Notification of Permit Application to the Pennsylvania Department of Environmental Resources (PaDER)

In accordance with Commonwealth of Pennsylvania Act 14, GPUN is providing notification of intent to renew an existing National Pollutant Discharge Elimination System Permit (NPDES Permit No. Pa 0009920). This existing NPDES Permit authorizes the discharge of industrial wastewater from the Three Mile Island Nuclear Station (TMINS) into the Susquehanna River.

Should you have any questions concerning this matter or require additional information, please contact Scott Cogley, TMINS Environmental Licensing Engineer, at (717) 948-8881.

Sincerely,

H. D. Hukill
Vice President and
Director, TMI-1

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P. O. BOX 480

MIDDLETOWN, PA 17057

Attn: S. Cogley, OSF
C331-90-2115

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. X Show to whom delivered, date, and addressee's address. (Extra charge)
2. ☐ Restricted Delivery (Extra charge)

3. Article Addressed to:

Dauphin Co. Commissioners
Dauphin Co. Courthouse
P. O. Box 1295
Harrisburg, PA 17108

4. Article Number

P 826 002 657

Type of Service:

- ☐ Registered
- ☐ Insured
- X Certified
- ☐ COD
- ☐ Express Mail
- ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee

X

6. Signature — Agent

X

7. Date of Delivery

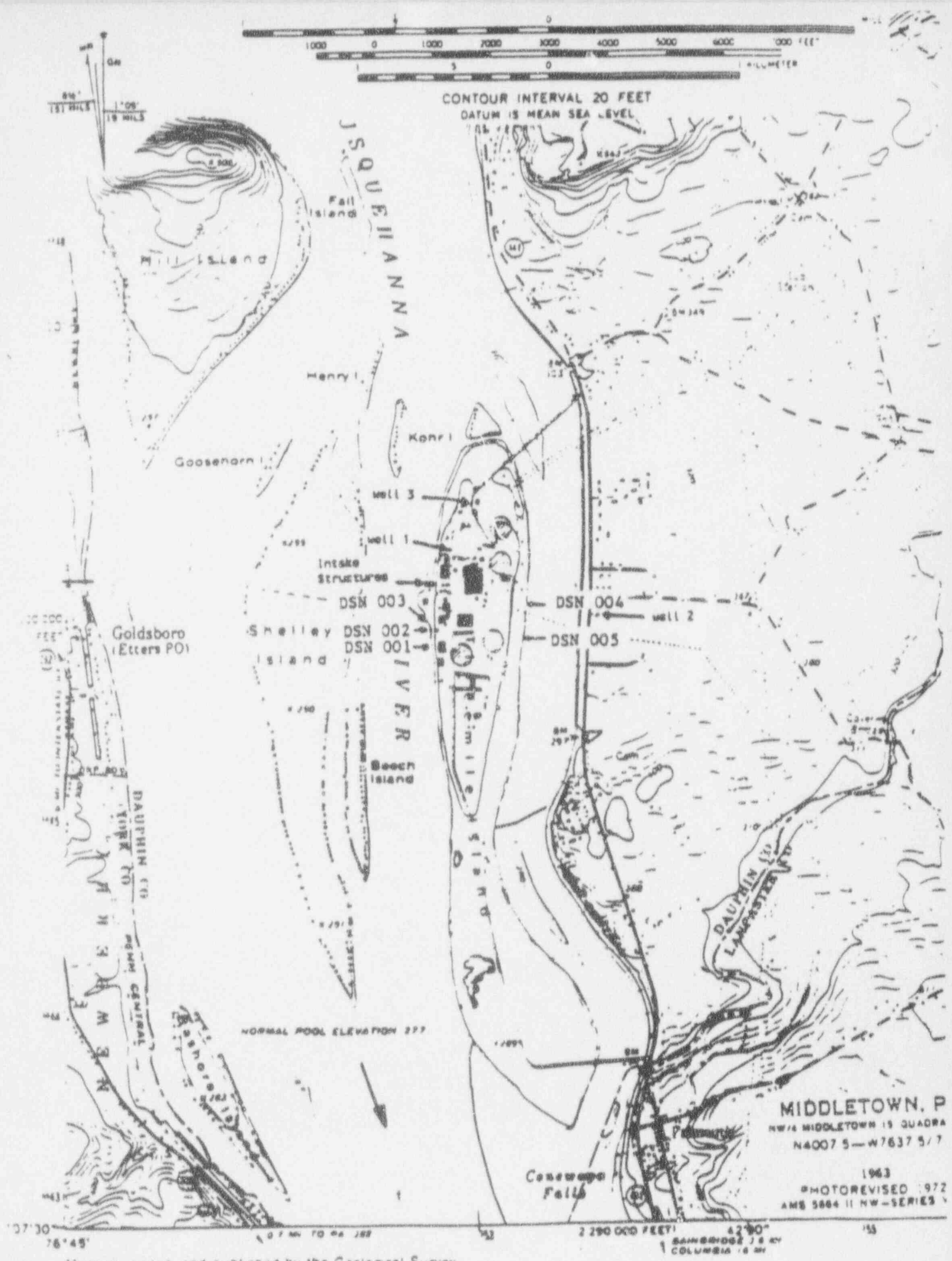
NOV 29 1990

8. Addressee's Address (ONLY if requested and fee paid)

PS Form 3811, Apr. 1989 *U.S.G.P.O. 1989-238-815 DOMESTIC RETURN RECEIPT

Attachment 3

Topographical Map



Mapped edited and published by the Geological Survey

NPDES OUTFALL LATITUDE/LONGITUDE BEARINGS
NPDES PERMIT

OUTFALL	LATITUDE			LONGITUDE		
No.	Degree	Minute	Second	Degree	Minute	Second
DSN 001	40	09	10	76	43	40
DSN 002	40	09	10	76	43	40
DSN 003	40	09	10	76	43	40
DSN 004	40	09	10	76	43	40
DSN 005	40	09	10	76	43	40

DRINKING WATER WELL LOCATIONS:

Well 1 - located adjacent to the TMI-1 OSF and NOB facilities
Well 2 - located adjacent to the TMINS Training Facility, east of Route 441
Well 3 - located adjacent to Building 48

Attachment 4

Material Safety Data Sheets

Material Safety Data Sheet Effective: 10/14/86 Section 1

Manufacturer's Name United States Borax & Chemical Corporation
Address(Number, Street, City, State, and ZIP Code)
3075 Wilshire Blvd., Los Angeles, CA 90010
Emergency Phone Information Phone Name of Preparer
(714)774-2673 Not Stated

Trade Name Boric Acid
Chemical Name Boric Acid
GPUN MSDS No. B275.00 Formula H3BO3

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
10043-35-3	Boric Acid	n/s	n/l	n/l

Other Notes:
n/s = not stated
n/l = not listed
n/a = not applicable

Physical Data Section 3

Boiling Point C(F)..... n/s
Specific Gravity (H2O=1). 1.5128
Percent Volatile..... n/s
By Volume (%)

Melting Point C(F)..... 179C(340F)
Vapor Pressure (mm Hg.).. n/s
Evaporation Rate..... n/s

Vapor Density (Air=1).... n/s
pH..... 3.7-6.1

Solubility in Water..... 4.72-27.53
Odor Threshhold..... n/s

Appearance and Odor: White crystalline solid.

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
n/a

Autoignition Temp.
n/s

Flammable Limits	Lel	Uel	NFPA Hazard Classes: Fire	Health	Reactivity	Other
In Air % By Vol.	n/s	n/s	0*	1*	0*	n/s

Extinguishing Media
Not required.
Special Fire Fighting Procedures
None.

Unusual Fire and Explosion Hazards
None. Product is an inherent fire retardant.

Threshhold Limit Value
n/l

Routes of Exposure
Skin, Eyes, Inhalation, Ingestion.

Symptoms of Overexposure
INGESTION: Acute Oral LD50 (Rats) 3.16 g/kg of body weight. May cause nausea, vomiting, diarrhea in large doses (15 gm or more).
EYES: (16 CFR 1500.42) Not an eye irritant - may cause slight, reversible conjunctivitis.
SKIN: Not an irritant. No evidence of tissue damage. May cause slight irritation on damaged skin. Acute Dermal LD50 (16 CFR 1500.40) >2 g/kg body weight (Rabbits).

Effects or Risks From Exposure
Primary skin irritation index (16 CFR 1500.41) 0.1 non-corrosive. Inhalation - nuisance dust. May cause transitory sneezing and coughing. Acute LC50 > 16 mg/L.
ACUTE OVEREXPOSURE: Eyes - May be slightly irritation as dry powder. Reversible. Skin - No penetration of intact skin. Absorption into blood stream through damaged skin may result in erythema, macular rash, CNS effects after 24 hours. Ingestion - Large doses (>15 gm) may cause erythema, macular rash, diarrhea, nausea, dizziness & CNS effects after 36-72 hours.
CHRONIC: Large amounts absorbed into blood stream by ingestion or through damaged skin may result in erythema, macular rash, nausoa, diarrhea, dizziness.

Listed as Carcinogen or Potential Carcinogen
NTP No **I.A.R.C.** No **OSHA** No

Emergency and First Aid Procedures
EYES: Flush with tepid water for 15 minutes.
SKIN: Flush with water. If skin is damaged, drink large amounts of water or milk.
INHALATION: Remove to fresh air.
INGESTION: Induce emesis. Drink large amounts of water or milk. Consult a physician.

Note to Physician
Gastric lavage with 5% sodium bicarbonate solution suggested for large amounts ingested. Saline cathartic. Force fluids. Riners' solution normal saline intravenously. For further medical management call emergency number in Section 1 Boric acid is not considered an acute poison. After ingestion or absorption into the bloodstream of large amounts, symptoms may appear after 24-72 hours. Borates are readily dissipated through urine (70% in the first 24 hours).

Reactivity Data — Section 6

Stability: Unstable Stable X

Conditions to Avoid:
Will dehydrate at 100C - 150C.

Incompatability (Materials to avoid):
Acetic anhydride, elemental potassium.

Hazardous Decomposition Products:
None.

Hazardous Polymerization: May Occur Will Not Occur X

Conditions to Avoid:
Contact with acetic anhydride or elemental potassium.

Other Comments:
n/s

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Sweep or vacuum followed by water rinse.

Waste Disposal Method:
Solid waste disposal site. Sanitary sewer for small quantities.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
Nuisance dust mask.

Ventilation:
Local Exhaust Yes.
Mechanical n/s
Special n/s
Other n/s

Protective Gloves:
None unless skin is damaged.
Eye Protection:
Dust goggles.
Other Protective Equipment:
None.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Dry indoor storage.
Retain package integrity.

Other Precautions:
n/s

Product Warning Label Statement — Section 10

WARNING...This product contains trace amounts of ARSENIC, a chemical known to the state of California to cause cancer.
Exposure to arsenic from this product will not exceed the Federal OSHA PEL unless used in a manner that produces extremely heavy airborne concentrations of borate material at levels many times allowable Federal OSHA limits.

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. n/s
UN/NA ID Number..... n/s
DOT Shipping Name..... n/s
DOT Labels..... n/s
IMCO Class..... n/s
DOT Hazard Class. n/s
Packaging Requirements
n/s

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... n/s
Product CAS No... n/s
Product Codes: n/s n/s n/s n/s
General Comments:
Product used at TMI.
Update of MSDS# B101.

IDN#
000140271

NOTE: Special quality, granular in 325 lb. drum.

VENDOR: Textile Chemical Company, Reading, Pa.
Kramer Chemicals, Inc, Clifton, NJ

Material Safety Data Sheet Effective: 05/01/83 Section 1

Manufacturer's Name Eagle Picher Industrial
Address(Number, Street, City, State, and ZIP Code)
200 9th Ave., NE, Miami, OK 74354
Emergency Phone Information Phone Name of Preparer
(918) 542-1801 Not stated

Trade Name Lithium Hydroxide Monohydrate 99.9+
Chemical Name Lithium Hydroxide Monohydrate 99.9+
GPUN MSDS No. L033.00 Formula Li7OH H2O

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
1310-66-3	Lithium hydroxide monohydrate	100	2 mg/m3	n/s

Other Notes:
n/s- not stated

Physical Data Section 3

Boiling Point C(F)..... Decomposes
Specific Gravity (H2O=1). 1.51
Percent Volatile..... n/a
By Volume (%)

Melting Point C(F)..... Unknown
Vapor Pressure (mm Hg.).. n/a
Evaporation Rate..... n/a

Vapor Density (Air=1).... n/a
pH..... n/s

Solubility in Water..... 233g/
Odor Threshhold..... n/s

Appearance and Odor: White to off-white crystals, may have fish odor.

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
Not applicable

Autoignition Temp.
Not stated

Flammable Limits	Lel	Uel	NFPA Hazard Classes: Fire	Health	Reactivity	Other
In air % by vol.	n/a	n/a	n/s	n/s	n/s	n/s

Extinguishing Media
Not applicable
Special Fire Fighting Procedures
None

Unusual Fire and Explosion Hazards
None
DOT HAZARD CLASS: Corrosive Material
DOT ID NO: UN 1759

Health Hazard Data Section 5(A,B,C)

Threshhold Limit Value
2 mg/m3

Routes of Exposure
Inhalation

Symptoms of Overexposure
General: Markedly corrosive on all body tissue, causes immediate burns: eyes and mucous membranes are expecially sensitive.
Oral Toxicity: Very high; caustic, sccarring ulceration possible; immediate burning of mouth and throat membranes.
Inhalation Toxicity: High; causes irritation to nose and lung membranes
Eyes: Extremely corrrosive, distinct possibility for blindness if not treated immediately.
Skin: Burning sensation, skin feels slippery when contacted by aqueous solution of LiOH.H2O.

Effects or Risks From Exposure
See section 5A

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
Inhalation: Contact physician.
Ingestion: Do not induce vomiting, contact physician immediately.
Eyes: Flush eyes with water for at least 15 minutes, contact physician immediately.
Skin: Rinse affected area with copious amounts of water, remove contaminated clothing contact physician immediately.

Note to Physician
Not stated

Reactivity Data — Section 6

Stability: Unstable Stable X
Conditions to Avoid:
Reacts slowly with CO2 in air to form Li2CO3

Incompatability (Materials to avoid):
Strong acids

Hazardous Decomposition Products:
Forms LiOH, LI2O and H2O when exposed to heat.

Hazardous Polymerization: May Occur Will Not Occur X
Conditions to Avoid:
Dissolves in H2O with libertion of heat, compare to LiOH which a heat of solution at 25C of -0.87 kcal/mole (slightly exothermic)
Other Comments:
Not stated

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Sweep up spill, seal in plastic bag or bottle.

Waste Disposal Method:
Add slowly to ice in hood behind safety shielf, neutralize mixture with acid, then flush down drain with excess water or return to EP/MRL for recovery of LI7 content.
EPA (RCRA) Hazardous Waste No: D002

Special Protection Information — Section 8

Respiratory Protection (Specify type):
Particulate filter mask

Ventilation:
Local Exhaust Not stated
Mechanical Fume hood
Special Not stated
Other Not stated

Protective Gloves:
Rubber
Eye Protection:
Goggles or face shield
Other Protective Equipment:
Sleeve protectors, rubber apron and boots optional.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Store in air and moisture proof container (sealed plastic bag inside steel drum).

Other Precautions:
DOT LABEL: Corrosive

Product Warning Label Statement — Section 10

Not stated

Shipping Information — Section 11

EPA Hazardous Waste ID Number..
UN/NA ID Number.....
DOT Shipping Name.....
DOT Labels.....
Packaging Requirements
IMCO Class.....
DOT Hazard Class.

Comments and Reference Numbers — Section 12

Safety Office File No...
Cross Ref. No...
Product Codes:
General Comments:
Product CAS No...

Material Safety Data Sheet **Effective:** 12/07/88 **Section 1**

Manufacturer's Name Olin Corporation
Address(Number, Street, City, State, and ZIP Code)
120 Long Ridge Rd., Stamford, CT 06904
Emergency Phone **Information Phone** **Name of Preparer**
(800)OLIN-911 Not Stated

Trade Name Scav-Ox
Chemical Name Hydrazine Solution, 35%
GPUN MSDS No. S713.00 **Formula** N2H4 H2O

Hazardous Ingredients **Section 2**

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
302-01-2	Hydrazine	35	0.1 ppm	1 ppm

Other Notes:
n/s = not stated
n/a = not applicable
n/d = not determined

Physical Data **Section 3**

Boiling Point C(F)..... 229F
Specific Gravity (H2O=1). 1.019
Percent Volatile..... n/d
By Volume (%)

Vapor Density (Air=1).... n/d
pH..... 10.1-10.7

Melting Point C(F)..... -87F
Vapor Pressure (mm Hg.).. n/d
Evaporation Rate..... n/d

Solubility in Water..... Complete
Odor Threshhold..... n/s

Appearance and Odor: Clear colorless liquid with odor of ammonia.

Fire and Explosion Hazard Data **Section 4**

Flash Point (Method Used)
Not Flammable

Autoignition Temp.
n/s

Flammable Limits **Lel** **Uel**

------ NFPA Hazard Classes ------
Fire **He\(*DDy-iC]A/p%a.|,er,?\fKn/**

Extinguishing Media
Flood with water to fight fire.
Special Fire Fighting Procedures
Use NIOSH/MSHA approved positive pressure SCBA when any material is involved in a fire. Wear butyl rubber encapsulated suit when fighting a fire involving this material.
Unusual Fire and Explosion Hazards
Hydrazine solution concentrated by fire-exposure can liberate hydrazine vapor (explosive limits hydrazine 4.7-100%).

P==}=()"uuuuuuuuuuuuuu|eGvOuuuuuuuuuuuuuuuuuuuU

Health Hazard Data **Section 5(A,B,C)**

Threshhold Limit Value
Hydrazine (skin) 0.1 ppm TWA 0.1 ppm STEL (ACGIH).

Routes of Exposure
Principal Routes of Absorption: Dermal, Inhalation.

Symptoms of Overexposure
Dizziness, nausea, skin, eye and mucous membrane irritation, CNS depression. May cause temporary blindness. Damage to liver, lungs, kidneys and blood.

Effects or Risks From Exposure
ACUTE EXPOSURE: Temporary blindness, dizziness, nausea, CNS depression. Damage to liver, lungs, kidneys and blood. Irritant to skin, eyes & mucous membranes.
CHRONIC EXPOSURE: Damage to liver, lungs, kidneys, blood & blood forming organs, dermatitis, allergic sensitization to skin. May cause fetal malformations.
TOXICITY INFO.: Acute Oral LD50 = 440 mg/kg (Rat). Acute Dermal LD50 = 400 mg/kg (Rabbit). Acute Inhalation LC50 = 1600 ppm (4 hrs.).
MUTAGENICITY: Positive. CARCINOGENICITY: Carcinogenic - animal studies (NTP).
EYE/SKIN IRRITATION: Irritant.

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
SKIN: Remove all contaminated clothing. Flush thoroughly with water for 15 minutes. Call a physician.
EYES: Flush thoroughly with water for 15 minutes. Call a physician.
INGESTION: Drink large quantities of water. Induce vomiting by sticking finger down throat. Call a physician.
INHALATION: Remove victim to fresh air. Call a physician.

Note to Physician
n/s

Reactivity Data — Section 6

Stability: Unstable Stable X
Conditions to Avoid:
Concentration of material by evaporation.

Incompatability (Materials to avoid):
Will react with oxygen, oxidants, many metal oxides and certin metal salts in their aqueous solutions.
Hazardous Decomposition Products:
Ammonia, hydrogen.

Hazardous Polymerization: May Occur Will Not Occur X
Conditions to Avoid:
n/s

Other Comments:
n/s

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Remove all sources of ignition. Wear goggles, butyl rubber gloves, boots and slicker suit. For spills indoors or involving hot material wear a positive pressure supplied air respirator or SCBA. Follow OSHA regulations for respirator use (29CFR1910.134). Isolate area of spill by diking. Stop source of leak. Transfer contents to non-leaking container or storage vessel. Neutralize spill by first diluting hydrazine to a 5% or less concentration. Then add an equal amount of a 5% or less concentration of a hypochlorite solution to totally neutralize the hydrazine. Test for neutralization. After neutralization,*
Waste Disposal Method:
Dispose of contaminated product, empty containers 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.

*transfer this material to an appropriate container for proper disposal. Wash all contaminated clothing before reuse. In the event of large spill, call the emergency telephone number, CHEMTREC 800-424-9300.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
n/s

Ventilation:
Local Exhaust As required to keep airbone concentrations of hydrazine below
Mechanical TLV.
Special n/s
Other n/s

Protective Gloves:
Butyl rubber.
Eye Protection:
Goggles.
Other Protective Equipment:
Coveralls, boots and butyl rubber apron.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Do not get in eyes, on skin or on clothing. Do not take internally. Upon contact with skin or eyes, wash off with water. Avoid breathing mist or vapor. Discard any contaminated leather articles. Store in a cool, dry, well-ventilated area away from oxidizing materials and acids. Avoid exposure to direct sunlight or high temperatures.

Other Precautions:
n/s

Product Warning Label Statement — Section 10

n/s

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. n/s
UN/NA ID Number..... n/s
DOT Shipping Name..... Not Regulated
DOT Labels..... n/s
Packaging Requirements
n/s

IMCO Class..... n/s
DOT Hazard Class. Not Regulated

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... n/s
Product Codes: n/s n/s

Product CAS No... n/s
n/s n/s

General Comments:
Product used at TMI.
Update of MSDS S169 and S691.

IDN#
000994171
000994170
010595271

Material Safety Data Sheet Effective: 11/21/88 Section 1

Manufacturer's Name Calgon Corporation
Address(Number, Street, City, State, and ZIP Code)
P. O. Box 1346, Pittsburgh, PA 15230
Emergency Phone Information Phone Name of Preparer
(412)777-8000 Not Stated

Trade Name Pre-Tect 4040
Chemical Name Condensate Corrosion Inhibitor
GPUN MSDS No. P434.00 Formula Morpholine Solution

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
110-91-8	Morpholine	40	20 ppm	20 ppm

Other Notes:
n/s = not stated
n/a = not applicable

Physical Data Section 3

Boiling Point C(F)..... Unknown
Specific Gravity (H2O=1). 1
Percent Volatile..... 100
By Volume (%)

Vapor Density (Air=1).... Unknown
pH..... 11.6

Melting Point C(F)..... n/s
Vapor Pressure (mm Hg.).. Unknown
Evaporation Rate..... n/s

Solubility in Water..... Complete
Odor Threshhold..... n/s

Appearance and Odor: Water white liquid.

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
>200F; Not flammable or combustible

Autoignition Temp.
n/s

Flammable Limits	Lel	Uel
In Air % By Vol.	n/s	n/s

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
0	3	1	COR

Extinguishing Media
This product is not flammable or combustible.
Special Fire Fighting Procedures
Firefighter should be equipped with SCBA and turnout gear.

Unusual Fire and Explosion Hazards
None.

Threshhold Limit Value
n/s

Routes of Exposure
n/s

Symptoms of Overexposure
ACUTE: Ingestion- Based on the oral LD50 of the hazardous component, this product would be regarded as moderately to slightly toxic if swallowed and may also produce severe irritation to the mouth, throat & GI tract. Inhalation- Prolonged exposure or exposure to high vapor concentrations may produce respiratory tract irritation. Dermal Exposure- (Toxic) Based on the dermal LD50 values of the hazardous component, this product would be regarded as moderately to slightly toxic if absorbed through the skin. (Irritation) This product may produce skin damage (i.e., chemical burns) upon prolonged contact with the skin. (Sensitization) No information was available to suggest that this product may produce an allergic skin reaction.

Effects or Risks From Exposure
Eye Irritation- This product may produce severe eye damage (i.e., chemical burns) upon contact with the eyes. Overexposure to vapors may produce transient eye irritation.
SUBCHRONIC, CHRONIC, OTHER: Repeated skin application and inhalation of morpholine has caused skin, lung, liver, and kidney injury in experimental animals. A chronic inhalation study in rats produced signs consistent with the reported irritating properties of morpholine but revealed no evidence of carcinogenicity.

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
EYES: Immediately flush with plenty of water for at least 15 minutes.
SKIN: Immediately wash with soap and plenty of water for at least 15 minutes while removing contaminated clothing.
INGESTION: If swallowed do NOT induce vomiting. Give large quantities of water. Never give anything by mouth to an unconscious person.
INHALATION: Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respriation.
NOTE: IN ALL CASES, GET IMMEDIATE MEDICAL ATTENTION.

Note to Physician
n/s

Reactivity Data — Section 6

Stability: Unstable Stable X
Conditions to Avoid:
Unknown.

Incompatability (Materials to avoid):
Acids and oxidizing materials.

Hazardous Decomposition Products:
Thermal combustion may produce CO, CO2 and NOx.

Hazardous Polymerization: May Occur Will Not Occur X
Conditions to Avoid:
n/s

Other Comments:
n/s

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Dike area to contain as much spilled material as possible. Remove any remaining material by absorbing on vermiculite or other suitable absorbing material and place in a sealed container for disposal.

Waste Disposal Method:
Dispose of in accordance with all federal, state and local regulations.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
An approved organic vapor respirator is recommended if the ACGIH-TLV or OSHA-PEL concentration for morpholine is exceeded.

Ventilation:
Local Exhaust Recommended.
Mechanical Recommended.
Special Use only in well-ventilated areas that will maintain air levels
Other below those established by federal, state and local regulations.

Protective Gloves:
Rubber.
Eye Protection:
Chemical splash goggles or full face shield.
Other Protective Equipment:
Not required.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
DANGER!
May cause severe eye damage and skin irritation
Do not get in eyes.
Avoid contact with skin and clothing.
Wear chemical splash goggles or face shield and rubber gloves when handling.
Avoid breathing vapor.
Wash thoroughly after handling.
Keep container closed when not in use.
Other Precautions:
Mixing amines with nitrites may result in the formation of nitrosamines, which have been reported to be carcinogenic in laboratory animals.

Product Warning Label Statement — Section 10

n/s

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. n/s
UN/NA ID Number..... n/s
DOT Shipping Name..... n/s
DOT Labels..... n/s
IMCO Class..... n/s
DOT Hazard Class. n/s
Packaging Requirements
n/s

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... n/s
Product CAS No... n/s
Product Codes: n/s n/s n/s n/s
General Comments:
Product used at TMI.

IDN#
038423260

Material Safety Data Sheet Effective: 10/29/80 Section 1

Manufacturer's Name Fisher Scientific Company
Address(Number, Street, City, State, and ZIP Code)
P.O. Box 375, 1 Reagent Lane, Fair Lawn, NJ 07410
Emergency Phone Information Phone Name of Preparer
Not Stated 201/796-7100 Gaston L. Pillori

Trade Name Ammonium Hydroxide Solution
Chemical Name Ammonium Hydroxide Solution
GPUN MSDS No. A096.00 Formula Not Stated

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
1336-21-6	Ammonium Hydroxide Solution	100	n/s	n/s

Other Notes:
n/s = not stated
n/a = not applicable/not available

Physical Data Section 3

Boiling Point C(F)..... Decomposes
Specific Gravity (H2O=1). .99
Percent Volatile..... 100%
By Volume (%)

Vapor Density (Air=1).... Unknown
pH..... n/s

Melting Point C(F)..... Unknown
Vapor Pressure (mm Hg.).. Unknown
Evaporation Rate..... >1

Solubility in Water..... Complete
Odor Threshhold..... n/s

Appearance and Odor: Colorless liquid.

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
n/a

Autoignition Temp.
n/s

Flammable Limits	Lel	Uel
% In AIr	n/a	n/a

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
*	*	*	n/s

Extinguishing Media
n/a
Special Fire Fighting Procedures
Wear SCBA.

Unusual Fire and Explosion Hazards
Emits toxic fumes of ammonium gas.

Health Hazard Data Section 5(A,B,C)

Threshhold Limit Value
25ppm (ammonia)

Routes of Exposure
n/s

Symptoms of Overexposure
n/s

Effects or Risks From Exposure
Vapor irritating to skin, eyes and mucous membrane.

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
INGESTION: Do not induce vomiting. Give water, diluted vinegar or orange juice. Contact a physician.
INHALATION: Remove to fresh air. Give artificial respiration if necessary.
SKIN/EYE: Flush with water for at least 15 minutes.
EYES: Co-'?-?-?-?-?-?-?-?-?-?95&ntact a physician.

Note to Physician
n/s

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Reactivity Data Section 6

Stability: Unstable **Stable** X
Conditions to Avoid:

n/s

Incompatability (Materials to avoid):
Iodine, strong acids, silver and mercury compounds.

Hazardous Decomposition Products:
Emits toxic fumes of ammonia gas.

Hazardous Polymerization: May Occur Will Not Occur X
Conditions to Avoid:
n/s

Other Comments:
n/s

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Neutralize with dilute acetic acid. Absorb on vermiculite. Scoop up and place in a suitable container.

Waste Disposal Method:
Dispose of by means as to comply with all local, state and federal regulations or contact an approved and licensed disposal agency.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
SCBA.

Ventilation:
Local Exhaust n/s
Mechanical fume hood
Special n/s
Other n/s

Protective Gloves:
Rubber
Eye Protection:
Safety glasses.
Other Protective Equipment:
n/s

Special Precautions — Section 9

Precautions to be taken in handling and storing:
n/s

Other Precautions:
n/s

Product Warning Label Statement — Section 10

n/s

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. n/s
UN/NA ID Number..... n/s
DOT Shipping Name..... n/s
DOT Labels..... n/s
Packaging Requirements
n/s

IMCO Class..... n/s
DOT Hazard Class. n/s

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... n/s
Product Codes: n/s n/s

Product CAS No... n/s
n/s n/s

General Comments:
Product used at TMI.

IDN#
018438890

Material Safety Data Sheet Effective: 01/11/87 Section 1

Manufacturer's Name The Chloramone Corporation
Address(Number, Street, City, State, and ZIP Code)
River Road & Red Lion Creek, P.O. Box 294, Delaware City, Delaware 19706

Emergency Phone	**Information Phone**	**Name of Preparer**
(302)834-4558	215/965-5130	Not Stated

Trade Name Javel Water Bleach, Soda Bleach
Chemical Name Sodium Hypochlorite
GPUN MSDS No. S634.01 **Formula** NaOCl

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
7681-52-9	Sodium Hypochlorite	7-15	n/s	n/s
7732-18-5	Water	n/s	n/a	n/a

Other Notes:
n/s = not stated; n/a = not applicable
n/e = not established; n/d = not determined

Physical Data Section 3

Boiling Point C(F)..... 110C @15%
Specific Gravity (H2O=1). 1.08-1.21
Percent Volatile..... Variable
By Volume (%)

Melting Point C(F)..... n/s
Vapor Pressure (mm Hg.).. n/s
Evaporation Rate..... n/a

Vapor Density (Air=1).... n/a
pH..... -12

Solubility in Water..... Complete
Odor Threshhold..... n/s

Appearance and Odor: Light yellow-green color; pungent odor, like chlorine.

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
Non-flammable

Autoignition Temp.
n/a

Flammable Limits	**Lel**	**Uel**
% In Air	n/s	n/s

------ NFPA Hazard Classes ------

Fire	**Health**	**Reactivity**	**Other**
0*	4*	0*	COR*

Extinguishing Media
n/s
Special Fire Fighting Procedures
Avoid fumes from spilled or exposed liquid, dilute copiously, ventilate, & be prepared to use respiratory protection if needed. Acid contamination will produce very irritating fumes similar to chlorine gas.
Unusual Fire and Explosion Hazards
Bleach decomposes when heated; decomposition products may cause containers to rupture or explode. Vigorous reaction possible with organic material or oxidizing agents, may result in a fire.

Threshhold Limit Value
See Section 2.

Routes of Exposure
n/s

Symptoms of Overexposure
INHALATION: Fumes from spills are very irritating to mucous membranes. Very little hazard from properly stored solution.
SKIN CONTACT: Irritant, reddening of skin, skin damage.
EYE CONTACT: Severe irritation.
INGESTION: Causes irritation of membranes of the mouth, throat & stomach pain & possible ulceration. LD50 (Oral-Rat) for 5.25% NaOCl is approximately 13 g/kg bodyweight & for 12.5% NaOCl is approximately 5 g/kg bodyweight.

Effects or Risks From Exposure
ACUTE: Irritating effects increase with strength of solution & time of exposure.
CHRONIC: Constant irritant to eyes, throat.

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
EYES: Copious eye wash with water for at least 15 minutes. Consult an eye specialist immediately.
INHALATION: Remove person to fresh iar.
INHALATION: If accidently swallowed, drink water, milk, and obtain medical attention. DO NOT USE BAKING SODA OR ACIDIC ANTIDOTES.

Note to Physician
n/s

Reactivity Data — Section 6

Stability: Unstable **Stable** X
Conditions to Avoid:
Solution of NaOCl are fairly stable in concentrations below 1%. Stability decreases with concentration, heat, light exposure, decrease in pH & contamina-*
Incompatability (Materials to avoid):
Avoid contamination with heavy metals (act as catalysts), reducing agents, organics, ether, ammonia, acids.
Hazardous Decomposition Products:
Hypochlorous acid (HCCl), chlorine, hydrochlorid acid. Composition upon temperature & decrease in pH. Additional decomposition products, which depend**
Hazardous Polymerization: May Occur **Will Not Occur** X
Conditions to Avoid:
*tion with heavy metals, such as nickel, cobalt, copper & iron.

Other Comments:
**upon pH, temp. & time, are sodium chloride, sodium chlorate & oxygen.

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Flush with water to dilute as much as possible, avoid heat & contamination with acid materials. Do not use combustible materials such as sawdust to absorb hypochlorite.
NEUTRALIZING CHEMICALS: Reducing agents such as bisulfites or ferrous salt solutions, some heat will be produced.
AQUATIC TOXICITY: Not established, but if not dilute may seriously affect aquatic life. Do not allow spilled material to neter sewers or streams.

Waste Disposal Method:
Reduce with chemicals listed above. Keep on alkaline side and dilute with copious quantities of water. Main end product is salt water (NaCl).

Special Protection Information — Section 8

Respiratory Protection (Specify type):
When fumes are present use NIOSH approved respirator with acid type canister.

Ventilation:
Local Exhaust No special ventilation required unless bleach is exposed to
Mechanical decomposition condition, i.e., spills or acidic conditions.
Special n/s
Other n/s

Protective Gloves:
Use rubber or plastic gloves when exposed to solutions stronger than 7%.
Eye Protection:
Use goggles when dispensing solutions stronger than 7% (household bleach).
Other Protective Equipment:
Use rubber apron, etc. to protect body from any splashing conditions. Use rubber protective shoes if spills occur. Safety showers & eyewash fountains should be available in storage & handling area.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Store in vented, closed, clean, non-corrosive containers in a cool, dry location, away from direct sunlight & not adjacent to chemicals which may react with the bleach if spillage occurs. If shipped, must comply with DOT, etc. shipping regulations. If closed containers become heated, the containers should be vented to release decomposition products (mainly oxygen under normal decomposition). Do not mix or contaminate with ammonia, hydrocarbons, acids, alcohols, ethers.

Other Precautions:
n/s

Product Warning Label Statement — Section 10

Normal handling of household bottled bleach required safety requirements as stated on the labels. Full protection should be provided when handling bulk shipments of concentrated, industrial bleach solutions.

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. n/s
UN/NA ID Number..... n/s
DOT Shipping Name..... *
DOT Labels..... n/s
IMCO Class..... n/s
DOT Hazard Class. *
Packaging Requirements
n/s
*>7% Chlorine by# = Corrosive Material; 7or<% by# = ORM-B.

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... MSDS#: CC-3
Product CAS No... n/s
Product Codes: n/s n/s n/s n/s
General Comments:
Product used at TMI.

IDN #
001709600

DISTRIBUTED BY: Manley-Regan Chemicals
Middletown, Pa.

BETZ LABORATORIES, INC.
4636 SOMERTON ROAD, TREVOSE, PA. 19047
BETZ MATERIAL SAFETY DATA SHEET
24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) 215/355-3300

:ODUCT : SLIMICIDE C-78P

EFFECTIVE DATE 04-04-89
PRINTED: 28-Apr-1989
REV:SEC.5

:ODUCT APPLICATION : SOLID MICROBIAL CONTROL AGENT.

---SECTION 1----------HAZARDOUS INGREDIENTS----------

:FORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC :ODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS STED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE ID CHRONIC HAZARDS OF THIS FORMULATION.

1-BROMO-3-CHLORO-5,5-DIMETHYLHYDANTOIN***CAS#16079-88-2;OXIDIZER;EYE AND SKIN IRRITANT;PEL:NONE;TLV:NONE.

---SECTION 2----------TYPICAL PHYSICAL DATA----------

:: 5% DISP. (APPROX.) 4.7	ODOR: HALOGEN
..PT.(DEG.F): >200 SETA(CC)	SP.GR.(70F)OR DENSITY: 65 LBS.CU.FT.
\POR PRESSURE(mmHG): NA	VAPOR DENSITY(AIR=1): NA
[SC cp@70F: NA	%SOLUBILITY(WATER): 1
/AP.RATE: NA WATER=1	APPEARANCE: WHITE
:YSICAL STATE: GRANULES	FREEZE POINT(DEG.F): NA

---SECTION 3----------REACTIVITY DATA----------

DIZING AGENT.DO NOT STORE OR MIX WITH REDUCING AGENTS

:ERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

PRODUCT: SLIMICIDE C-78P EFFECTIVE DATE 04-04-8

-----SECTION 4----------HEALTH HAZARD EFFECTS----------

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE
MODERATELY IRRITATING.MAY BE CORROSIVE IN CONTACT WITH MOIST SKIN.

ACUTE EYE EFFECTS ***
SEVERE IRRITANT TO THE EYES

ACUTE RESPIRATORY EFFECTS ***
DUSTS CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***
NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS.

MEDICAL CONDITIONS AGGRAVATED ***
NOT KNOWN

SYMPTOMS OF EXPOSURE ***
MAY CAUSE REDNESS OR ITCHING OF SKIN.

PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS ***
MAY BE TOXIC IF ORALLY INGESTED.

-----SECTION 5----------FIRST AID INSTRUCTIONS----------

SKIN CONTACT***
REMOVE CLOTHING.WASH AREA WITH LARGE AMOUNTS OF SOAP SOLUTION OR WATER FOR 15 MIN.IMMEDIATELY CONTACT PHYSICIAN

EYE CONTACT***
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE***
REMOVE VICTIM FROM CONTAMINATED AREA.APPLY NECESSARY FIRST AID TREATMENT.IMMEDIATELY CONTACT A PHYSICIAN.

INGESTION***
DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
DO NOT INDUCE VOMITING.IMMED.CONTACT PHYSICIAN.DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

-----SECTION 6----------SPILL,DISPOSAL AND FIRE INSTRUCTIONS---------

SPILL INSTRUCTIONS***
VENTILATE AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.SPILLED MATERIAL WHICH CAN NOT BE RECOVERED FOR RE-USE,SHOULD BE PLACED IN A WASTE DISPOSAL CONTAINER AND DISPOSED OF IN AN APPROVED PESTICIDE LANDFILL.SEE PRODUCT LABEL STORAGE AND DISPOSAL INSTRUCTIONS.
PRODUCT RELEASES CHLORINE WHEN WET.SPILL RESIDUE MAY BE NEUTRALIZED WITH 3% HYDROGEN PEROXIDE SOLUTION.

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 NPDES PERMIT
PRODUCT(AS IS)-
DISPOSE OF IN APPROVED PESTICIDE FACILITY OR ACCORDING TO LABEL INSTRUCTIONS

FIRE EXTINGUISHING INSTRUCTIONS***
FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).
FLOOD WITH WATER.USE OF CO2 OR FOAM MAY NOT BE EFFECTIVE.

PRODUCT: SLIMICIDE C-78P EFFECTIVE DATE 01-04-9

-----SECTION 7----------SPECIAL PROTECTIVE EQUIPMENT----------

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.

VENTILATION PROTECTION***
ADEQUATE VENTILATION TO MAINTAIN DUST CONCENTRATIONS BELOW THE EXPOSURE LIMIT OF 10MG/M3(PEL/TLV) FOR NUISANCE DUSTS.

RECOMMENDED RESPIRATORY PROTECTION***
IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE RESPIRATOR WITH ORGANIC VAPOR,ACID GASSES & DUST/MIST CARTRIDGES

RECOMMENDED SKIN PROTECTION***
GAUNTLET-TYPE NEOPRENE GLOVES,CHEMICAL RESISTANT APRON
WASH OFF AFTER EACH USE.REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***
AIRTIGHT CHEMICAL GOGGLES

-----SECTION 8----------STORAGE AND HANDLING PRECAUTIONS----------

STORAGE INSTRUCTIONS***
KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.
KEEP DRY.DO NOT STORE AT HIGH TEMP.OR NEAR OXIDIZABLES/COMBUSTIBLES

HANDLING INSTRUCTIONS***
GENERAL-IMMEDIATELY REMOVE CONTAMINATED CLOTHING,WASH BEFORE REUSE
SPECIFIC- OXIDIZER.AVOID ALL CONTACT WITH REDUCING AGENTS, OILS, GREASES, ORGANICS AND ACIDS.

****

THIS MSDS COMPLIES WITH THE OSHA HAZARD COMMUNICATION STANDARD
! OLD M. HERSH (ENVIRONMENTAL INFORMATION COORDINATOR)

****

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY
...FIFRA(40CFR):EPA REG.NO. 5785-65-3876
...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:
NOT APPLICABLE
...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: NOT APPLICABLE
...DOT HAZARD CLASSIFICATION: OXIDIZER
...DOT SHIPPING DESIGNATION IS: UN1479 OXIDIZER, N.O.S.

...THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR REPRODUCTIVE TOXICITY: NONE PRESENT IN SIGNIFICANT AMOUNTS
...SARA SECTION 302 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS
...SARA SECTION 313 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS
...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE) AND FIRE
...MICHIGAN CRITICAL MATERIALS: NONE PRESENT IN SIGNIFICANT AMOUNTS
NFPA/HMIS : HEALTH - 2 ; FIRE - 1 ; REACTIVITY - 1 ; SPECIAL - OXY ; PE - C

Material Safety Data Sheet **Effective:** 01/17/86 **Section 1**

Manufacturer's Name The Chloramone Corporation
Address(Number, Street, City, State, and ZIP Code)
River Road & Red Lion Creek, P.O. Box 294, Delaware City, DE 19706
Emergency Phone **Information Phone** **Name of Preparer**
(302)834-4558 Not stated

Trade Name Chlorine
Chemical Name Chlorine
GPUN MSDS No. C424.00 **Formula** Cl2

Hazardous Ingredients **Section 2**

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
7782-50-5	Chlorine	100	1 ppm	1 ppm

Other Notes:
n/s- not stated
n/a- not applicable

Physical Data **Section 3**

Boiling Point C(F)..... -29.3
Specific Gravity (H2O=1). 1.4
Percent Volatile..... 100
By Volume (%)

Vapor Density (Air=1).... 2.5
pH..... 5.5

Melting Point C(F)..... n/s
Vapor Pressure (mm Hg.).. 2748
Evaporation Rate..... n/s

Solubility in Water..... 0.7%
Odor Threshhold..... n/s

Appearance and Odor: Amber color liquid. Greenish-yellow gas. Pungent irritating odor.

Fire and Explosion Hazard Data **Section 4**

Flash Point (Method Used)
n/a

Autoignition Temp.
n/a

Flammable Limits In air % by vol.	Lel	Uel
	non-flam	non-flam

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
0	3	0	n/s

Extinguishing Media
Use H20 to keep fire-exposed containers cool & to direct escaping gas away.
Special Fire Fighting Procedures
Chlorine containers should be removed from the fire zone immediately. Tank car or barges should be disconnected & pulled out of the danger area. If no chlorine is escaping use water to cool containers that cannot be moved.
Unusual Fire and Explosion Hazards
Chlorine, gas or liquid, is non-explosive and non-flammable. However, like oxygen it is capable of supporting combustion of certain substances. If necessary to stop flow of gas, use water spray to direct gas away from firefighter.

Threshhold Limit Value
1.0 ppm or 3.0 mg/m3.

Routes of Exposure
Chlorine gas is a primary irritant of the respiratory tract.

Symptoms of Overexposure
ACUTE OVEREXPOSURE: Extreme irritation and burns to eyes and skin, coughing and labored breathing, restlessness, sneezing, retching/vomiting, even death from suffocation or chemical pneumonia. All symptoms and signs result directly or indirectly from local irritation action.
CHRONIC OVEREXPOSURE: Low concentration of chlorine gas in air may have an irritating effect.

Effects or Risks From Exposure
INHALATION: Strong irritant to the mucous membranes of the respiratory tract. In high concentration, death may occur from suffocation or chemical pneumonia.
SKIN: Liquid chlorine in contact with the skin will cause local irritation and/or burns. SKIN ABSORPTION: n/a
EYES: Liquid and/or high concentrations of chlorine gas in contact with the eyes will cause extreme irritation and/or burns.
INGESTION: n/a

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
EYES: IMMEDIATELY flush eyes with large amounts of water for at least 15 min. holding lids apart to ensure flushing of the entire eye surface. Washing eyes within 1 min. is essential to achieve maximum effectiveness.
SKIN: Wash contaminated areas with plenty of water. Remove contaminated clothing & footwear & wash before reuse.
INHALATION: Get person out of contaminated area to fresh air. If breathing has stopped, resuscitate & administer oxygen if readily available.
INGESTION: n/a

**NOTE: IN ALL CASES, SEEK IMMEDIATE MEDICAL ATTENTION.

Note to Physician
Treatment is symptomatic. Because there is no known antidote for chlorine gas inhalation, effective & immediate relief of symptoms if the primary goal. Steroid therapy, if given early, has been reported effective in preventing pulmonary edema.

Reactivity Data — Section 6

Stability: Unstable Stable X

Conditions to Avoid:
Avoid the release of chlorine to the atmosphere. Do not place chlorine container near excessive heat or fire; never use water on a chlorine leak.

Incompatability (Materials to avoid):
Moist chlorine is very corrosive to most common metals. Dry chlorine reacts with aluminum, gold, mercury, tin, titanium, organic compounds.

Hazardous Decomposition Products:
None.

Hazardous Polymerization: May Occur Will Not Occur X

Conditions to Avoid:
n/s

Other Comments:
n/s

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Chlorine can be absorbed into an alkaline solution, i.e., caustic soda (NaOH), caustic potash (KOH), lime, etc.
If a material is spilled or released to the atmosphere, steps should be taken to contain liquids and prevent discharges to streams or sewer systems; and control or stop the loss of volatile materials to the atmosphere. Spills or releases should be reported, if required to the appropriate local, state and federal regulatory agencies.

Waste Disposal Method:
Dispose in accordance with all federal, state and local health and pollution regulations. Depending upon the particular situation involved, special equipment may be required. Consult your chlorine supplier.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
Use a NIOSH/MSHS approved respirator following manufacturer's recommendations where gas leaks may occur.

Ventilation:
Local Exhaust Where engineering controls are not feasible, use local exhaust
Mechanical ventilation where gas leaks may occur.
Special n/s
Other n/s

Protective Gloves:
Impervious gloves should be worn. Natural rubber or latex have been used.

Eye Protection:
Face shields and goggles or chemical goggles should be worn.

Other Protective Equipment:
Standard work clothing. Wash contaminated clothing with soap and water and dry before reuse. Shower and eyewash facilities should be accessible. Discard contaminted gloves.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Clean-up action should be carefully planned and executed. Shipment, storage, and/or disposal of waste materials are regulated and action to handle spilled or released materials must meet the applicable rules. If any question exists, the appropriate agencies should be contacted to assure proper action being taken.
Do not place chlorine containers near heat or fire. Handling and storage of chlorine containers should be in accordance with all local, state and federal regulations.
Other Precautions:
Not stated

Product Warning Label Statement — Section 10

DANGER - POISON!!
HAZARDOUS LIQUID AND GAS UNDER PRESSURE
KEEP OUT OF REACH OF CHILDREN.
FOR INDUSTRIAL USE ONLY
Do not handle or use until MSDS provided by manufacturer has been read & understood. Do not breathe air containing this gas. Do not heat container. Have available emergency gas mask approved by NIOSH/MSHA for chlorine service. In case of exposure, move patient to fresh air, keep him warm & quiet.

Shipping Information — Section 11

EPA Hazardous Waste ID Number..
UN/NA ID Number.....
DOT Shipping Name.....
DOT Labels.....
Packaging Requirements
IMCO Class.....
DOT Hazard Class.

Comments and Reference Numbers — Section 12

Safety Office File No...
Cross Ref. No...
Product Codes:
General Comments:
Product CAS No...

Material Safety Data Sheet **Effective:** 11/01/85 **Section 1**

Manufacturer's Name C-I-L Corporation of America
Address(Number, Street, City, State, and ZIP Code)
100 First Stamford Place, P.O. Box 10201, Stamford, CO 06904-2201
Emergency Phone **Information Phone** **Name of Preparer**
203/323-3500 Not stated

Trade Name Sulfuric Acid
Chemical Name Sulfuric Acid
GPUN MSDS No. S207.00 **Formula** N2SO4

Hazardous Ingredients @ **Section 2**

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
	Not stated			

Other Notes:
Synonyms: Oil of Vitriol, Sulphuric Acid

Physical Data **Section 3**

Boiling Point C(F)..... 529F
Specific Gravity (H2O=1). 1.8354
Percent Volatile..... 0
By Volume (%)

Vapor Density (Air=1).... No data
pH..... -1 @ 93%

Melting Point C(F)..... -21.1F
Vapor Pressure (mm Hg.).. 0.001
Evaporation Rate..... n/a

Solubility in Water..... Miscible
Odor Threshhold..... n/s

Appearance and Odor: Clear to amber, heavy, oily liquid which may have a sharp pentrating SO2 odor. Electrolytic grade is clear, oily and odorless.

Fire and Explosion Hazard Data **Section 4**

Flash Point (Method Used)
Not applicable

Autoignition Temp.
Not combustible

			------ NFPA Hazard Classes ------			
Flammable Limits	**Lel**	**Uel**	**Fire**	**Health**	**Reactivity**	**Other**
In air % by vol.	None	None	n/s	n/s	n/s	n/s

Extinguishing Media
Use appropriate media to extinguish source of fire. Use water carefully.
Special Fire Fighting Procedures
Fire involving small amount of combustibles may be smothered with suitable dry chemical. Use water on combustibles burning vicinity of this material but use care; water applied directly will cause evolution of heat/spattering.
Unusual Fire and Explosion Hazards
Not flammable but highly reactive; capable of igniting finely divided combustible materials with evolution of heat. Extremely hazardous in contact with many materials particularly carbides, chlorates, fulminates, nitrates, etc.

Threshhold Limit Value
ACGIH TLV-TWA (1985-86): 1 mg/m3 OSHA PEL: 1 mg/m3

Routes of Exposure
Inhalation, skin, eyes, ingestion

Symptoms of Overexposure
Inhaled: Causes severe irritation of the respiratory tract, may cause increased pulmonary resistance, transient cough and broncho-constriction. Severe overexposure may result in lung collapse and pulmonary edema which can be fatal. Prolonged or repeated exposure may result in impaired lung function or discoloration and erosion of teeth. Skin: Corrosive to the skin. May cause severe burns. Prolonged or repeated exposure to dilute solutions may cause irritation and dermatitis. Eyes: Contact with eyes will result in severe damage causing burns or blindness. Ingested: May cause severe pain, ulceration and scarring of the digestive tract.

Effects or Risks From Exposure
Toxicological Data: LD50 (oral, rat): 2140 mg/kg
LC50 (inhalation, rat): 510 mg/m3 for 2 hrs.

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
Inhaled: Remove to fresh air. If not breathing, give artificial respiration. Keep patient warm and at rest. Obtain medical attention. Skin: Remove contaminated clothing. Flush affected areas with running water for at least 20 minutes. Obtain medical attention. Eyes: Flush eyes with running water for at least 20 minutes holding eyelids open. Obtain medical attention immediately. Ingested: If conscious give 1-2 glasses of milk or water. DO NOT induce vomiting. Obtain medical attention.

Note to Physician
Medical conditions that may be aggravated by exposure include asthma, bronchitis, emphysema and other lung diseases and chronic nose, sinus or throat conditions. In the event of skin or eye contact, rapid and thorough flushing is essential.

Reactivity Data — Section 6

Stability: Unstable Stable X
Conditions to Avoid:
Temperatures which may affect the materials used in equipment.

Incompatability (Materials to avoid):
Contact of acid with organic material (such as chlorates, carbides, fulminates and picrates) may cause fire and explosions. Contact of acid with metals may *
Hazardous Decomposition Products:
Toxic gases and vapor (e.g., sulfur dioxide, sulfuric acid vapors, sulfur trioxide) ay be released when sulfuric acid decomposes.
Hazardous Polymerization: May Occur Will Not Occur X
Conditions to Avoid:
Not stated

Other Comments:
* from toxic sulfur dioxide gas and flammable hydrogen gas.

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Remove all ignition sources. Ventilate area. Stop and contain leak or spill. Dike with inert material (sand, earth, etc.). Collect into containers for reclaim or disposal. Harmful to aquatic life in very low concentrations. May be dangerous if it enters water intake; fish toxicity critical concentration= 10 mg/l; 7.34 mg/l/48 hrs-:ymnaea Palustris-0-100% mortality. Lime, limestone, sodium carbonate (soda ash), sodium bicarbonate, dilute sodium hydroxide, dilute aqua ammonia.

Waste Disposal Method:
Donsult federal, state, and local regulations on chemical waste disposal. May be possible to neutralize, absorb and dispose of in a secure sanitary landfill site.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
NIOSH/MSHA approved air purifying resp equipped with acid gas/fume, dust, mist cartridges for concentrations up to 10 mg/m3. Air-supplied resp for higher *

Ventilation:
Local Exhaust Not stated
Mechanical Sufficient
Special Not stated
Other Not stated

Protective Gloves:
Rubber gloves
Eye Protection:
Tight-fitting chemical goggles and face shield.
Other Protective Equipment:
Rubber boots and full protective clothing. Safety showers and eyewash fountains should be installed in storage and handling areas.
* or unknown concentrations.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Carbon steel or stainless steel materials are suitable for use for acid concentrations greater than 93%. Store above freezing point. Store in a dry, well-ventilated location away from combustibles, oxidizers, bases, or metallic powders.

Other Precautions:
Keep away from ignition sources. Sulfuric acid will attack some forms of plastics and coatings. Always add acid to water--not water to acid. If kept in upper floors of building, floors should be acid proof with drains to a recovery tank.

Product Warning Label Statement — Section 10

Not stated

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. n/s
UN/NA ID Number..... n/s
DOT Shipping Name..... n/s
DOT Labels..... n/s
Packaging Requirements
n/s

IMCO Class..... n/s
DOT Hazard Class. n/s

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... n/s
Product Codes: n/s n/s

Product CAS No... n/s
n/s n/s

General Comments:
Product used at TMI.

IDN #
021340470
002748111

Material Safety Data Sheet Effective: 03/25/88 Section 1

Manufacturer's Name Nalco Chemical Company
Address(Number, Street, City, State, and ZIP Code)
One Nalco Center, Naperville, IL 60566-1024
Emergency Phone Information Phone Name of Preparer
(312) 961-9500 John J. Kasper, MSC.

Trade Name NALCO 41 Corrosion Inhibitor
Chemical Name Nalco 41 Corrosion Inhibitor
GPUN MSDS No. N184.00 Formula Not Stated

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
64741-52-2	Light Naphthenic Distillate	>20	n/s	n/s
64741-53-3	Heavy Naphthenic Distillate	>20	n/s	n/s
9002-93-1	Ethoxylated Octylphenol	1-10	n/s	n/s
71-36-3	n-Butyl Alcohol	1-10	n/s	n/s

Other Notes:
n/s = not stated
n/a = not applicable

Physical Data Section 3

Boiling Point C(F)..... n/s
Specific Gravity (H2O=1). 0.91
Percent Volatile..... n/s
By Volume (%)

Melting Point C(F)..... n/s
Vapor Pressure (mm Hg.).. n/s
Evaporation Rate..... n/s

Vapor Density (Air=1).... 7.61bs/gal
pH..... 7.3

Solubility in Water..... Insoluble
Odor Threshhold..... n/s

Appearance and Odor: Blue clear liquid, hydrocarbon odor. A sulfonate, ethoxylated octylphenol and butanol in a hydrocarbon solvent.

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
116F (PMCC) ASTM D-93

Autoignition Temp.
n/s

Flammable Limits	Lel	Uel
In Air % by Vol.	n/s	n/s

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
2	1	0	n/s

Extinguishing Media
Dry chemical, alcohol foam, CO2 or other agent suitable for Class B fires.
Special Fire Fighting Procedures
Use water to cool containers exposed to fire. For large fires, use water spray or fog, thoroughly drenching the burning material.

Unusual Fire and Explosion Hazards
Treat as any hydrocarbon type fire.

Threshhold Limit Value
n/s

Routes of Exposure
Primary: Eye, Skin, Inhalation.

Symptoms of Overexposure
ACUTE: Inhalation of high concentrations of naphthenic distillate can cause nausea, dizziness, vomiting or unconsciousness.
CHRONIC: Prolonged and repeated skin contact with naphthenic distillate can cause defatting and drying of skin leading to irritation and dermatitis.
AGGRAVATION OF EXISTING CONDITIONS: A review of available data does not identify any worsening of existing conditions.

Effects or Risks From Exposure
EYE CONTACT: Can cause moderate irritation.
SKIN CONTACT: Can cause moderate irritation.
INGESTION: Can be harmful.
INHALATION: Prolonged inhalation of vapor may be harmful.
CANCER EVALUATION: The IARC Monographs has identified the following substance(s): Light and heavy naphthenic distillate. As a suspect cancer-causing agent based on sufficient evidence in experimental animals but inadequate human evidence.

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.
SKIN: Wash thoroughly with soap and rinse with water. Call a physician.
INGESTION: Do not induce vomiting. Give water. Call a physician.
INHALATION: Remove to fresh air. Treat symptoms. Call a physician.

Note to Physician
No specific antidote is known. Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.
CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

Reactivity Data — Section 6

Stability: Unstable Stable X
Conditions to Avoid:
n/s

Incompatability (Materials to avoid):
Avoid contact with strong oxidizers which can generate heat, fire, explosions, release of toxic fumes. (eg. chlorine, peroxides, chromates, nitric acid, etc)
Hazardous Decomposition Products:
In the event of combustion CO, CO2 may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.
Hazardous Polymerization: May Occur Will Not Occur X
Conditions to Avoid:
n/s

Other Comments:
n/s

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
SMALL LIQUID SPILLS: Contain with absorbent material such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid & absorbent into recovery or salvage drums for disposal. LARGE LIQUID SPILLS: Dike to prevent further movement & reclaim into recovery or salvage drums or tank truck for disposal. LARGE INDOOR SPILLS: Evacuate employees & ventilate area. Those responsible for control & recovery should wear protective equipment (Section 8). Keep the spill away from heat, sparks, flames & welding operations. Ventilate area & evacuate employees from exposure if the TLV is exceeded.
Waste Disposal Method:
If this product becomes a waste, it meets the criteria of a hazardous waste as defined under RCRA. Hazardous Waste D001.
As a hazardous liquid waste, it must be solidified before disposal in a landfill (Hazardous Waste Treatment, Storage and Disposal facility). Can be incinerated in accordance with local, state and federal regulations.
NOTE: IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (312) 920-1510.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
Respiratory protection is not normally needed since the volatility & toxicity are low. If significant vapors or aerosols are generated, wear a NIOSH approved or equivalent respirator.
Ventilation:
Local Exhaust General ventilation is recommended.
Mechanical
Special
Other

Protective Gloves:
Use impermeable gloves when attaching feeding equipment or doing maintenance.
Eye Protection:
Use chemical splash goggles when attaching feeding equip. or doing maintenance
Other Protective Equipment:
If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Keep container closed when not in use. Use with adequate ventilation. Keep away from heat, sparks and open flames.

Other Precautions:
Do not take internally. Avoid eye and prolonged skin contact. Remove and launder contaminated clothing before reuse. Avoid inhalation of mist or vapors if generated.

Product Warning Label Statement — Section 10

Contains light & heavy naphthenic distillate: Possible cancer hazard based on tests with laboratory animals.
CAUTION: May cause irritation to skin and eyes. Avoid contact with skin, eyes & clothing. Avoid prolonged or repeated breathing of vapor. Use with adequate ventilation. Do not take internally. Keep away from heat & open flame. Keep container closed when not in use. Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. n/s **IMCO Class.....** n/s
UN/NA ID Number..... NA1993 **DOT Hazard Class.** n/s
DOT Shipping Name..... Combustible Liquid, N.O.S.
DOT Labels..... CONTAINS N-BUTANOL
Packaging Requirements
n/s

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... n/s **Product CAS No...** n/s
Product Codes: n/s n/s n/s n/s
General Comments:
Product used at TMI.
Update of N002 and N107.

IDN#
000713581

BETZ LABORATORIES, INC.
4636 SOMERTON ROAD, TREVOSE, PA. 19047
BETZ MATERIAL SAFETY DATA SHEET
24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) 215/355-3300

PRODUCT : POWERLINE 3210

EFFECTIVE DATE 07-27-89
PRINTED: 19-Oct-1989
REV:2

PRODUCT APPLICATION : WATER-BASED CORROSION INHIBITOR.

-----SECTION 1----------HAZARDOUS INGREDIENTS----------

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

POTASSIUM MOLYBDATE***CAS#13446-49-6;POTENTIAL IRRITANT;PEL/TLV:5MG/M3(AS Mo)

POTASSIUM NITRITE***CAS#7758-09-0;OXIDIZER;POTENTIAL BLOOD TOXIN;TOXIC BY ORAL INGESTION;IRRITANT;PEL/TLV:NONE.

-----SECTION 2----------TYPICAL PHYSICAL DATA----------

PH: AS IS (APPROX.) 12.6	ODOR: SLIGHT
FL.PT.(DEG.F): >200 P-M(CC)	SP.GR.(70F)OR DENSITY: 1.205
VAPOR PRESSURE(mmHG): 18	VAPOR DENSITY(AIR=1): <1
VISC cps70F: 9	%SOLUBILITY(WATER): 100
EVAP.RATE: <1 ETHER=1	APPEARANCE: LIGHT YELLOW
PHYSICAL STATE: LIQUID	FREEZE POINT(DEG.F): 10

-----SECTION 3----------REACTIVITY DATA----------

STABLE.MAY REACT WITH STRONG OXIDIZERS.DO NOT CONTAMINATE.BETZ TANK CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: POWERLINE 3210 EFFECTIVE DATE 07-2[illegible]-

-----SECTION 4----------HEALTH HAZARD EFFECTS----------

ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE
MODERATELY IRRITATING TO THE SKIN

ACUTE EYE EFFECTS ***
SEVERE IRRITANT TO THE EYES

ACUTE RESPIRATORY EFFECTS ***
MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE***
PROLONGED OR REPEATED EXPOSURES MAY CAUSE BLOOD CELL DAMAGE OR IMPAIR BLO
CELL FUNCTION.

MEDICAL CONDITIONS AGGRAVATED ***
NOT KNOWN

SYMPTOMS OF EXPOSURE ***
MAY CAUSE REDNESS OR ITCHING OF SKIN.

PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS ***
MAY BE TOXIC IF ORALLY INGESTED.

-----SECTION 5----------FIRST AID INSTRUCTIONS----------

SKIN CONTACT***
REMOVE CONTAMINATED CLOTHING.WASH EXPOSED AREA WITH A LARGE QUANTITY OF
SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT***
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A
PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE***
REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE
FIRST AID TREATMENT AS NECESSARY

INGESTION***
DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
DO NOT INDUCE VOMITING.IMMED.CONTACT PHYSICIAN.DILUTE CONTENTS OF
STOMACH USING 3-4 GLASSES MILK OR WATER

-----SECTION 6----------SPILL,DISPOSAL AND FIRE INSTRUCTIONS---------

SPILL INSTRUCTIONS***
VENTILATE AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.CONTAIN AND ABSORB
ON ABSORBENT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE
CHARACTERISTICS OF THE ABSORBED MATERIAL,OR ANY CONTAMINATED SOIL,
SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.
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 NPDES PERMIT
PRODUCT(AS IS)-
INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS***
FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING
APPARATUS(FULL FACE-PIECE TYPE).
FLOOD WITH WATER.USE OF CO2 OR FOAM MAY NOT BE EFFECTIVE.

BETZ MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

PRODUCT: POWERLINE 3210 EFFECTIVE DATE 07-27-89

-----SECTION 7----------SPECIAL PROTECTIVE EQUIPMENT----------

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.

'ENTILATION PROTECTION***
ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS

RECOMMENDED RESPIRATORY PROTECTION***
IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION***
RUBBER GLOVES
WASH OFF AFTER EACH USE.REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***
SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8----------STORAGE AND HANDLING PRECAUTIONS----------

STORAGE INSTRUCTIONS***
KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.
DO NOT FREEZE.IF FROZEN,THAW AND MIX COMPLETELY PRIOR TO USE

HANDLING INSTRUCTIONS***
GENERAL-IMMEDIATELY REMOVE CONTAMINATED CLOTHING,WASH BEFORE REUSE
SPECIFIC- ALKALINE.DO NOT MIX WITH ACIDIC MATERIAL.

****

THIS MSDS COMPLIES WITH THE OSHA HAZARD COMMUNICATION STANDARD
HAROLD M. HERSH (ENVIRONMENTAL INFORMATION COORDINATOR)

****

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. Y CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

..TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY
...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:
NOT APPLICABLE
..RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE 'DENTIFICATION NUMBER IS: D002=CORROSIVE
..DOT HAZARD CLASSIFICATION: NOT APPLICABLE
..DOT SHIPPING DESIGNATION IS: NOT APPLICABLE

..THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO :AUSE CANCER OR REPRODUCTIVE TOXICITY: NONE PRESENT IN SIGNIFICANT AMOUNTS
..SARA SECTION 302 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS
..SARA SECTION 313 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS
..SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE) AND DELAYED(CHRONIC)
..MICHIGAN CRITICAL MATERIALS: NONE PRESENT IN SIGNIFICANT AMOUNTS
(FPA/HMIS : HEALTH - 2 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - ALK ; PE - B

7 of 27

BETZ LABORATORIES, INC.
4636 SOMERTON ROAD, TREVOSE, PA. 19047
BETZ MATERIAL SAFETY DATA SHEET
24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) 215/355-3300

EFFECTIVE DATE 12-13-89
PRINTED: 15-Dec-1989

PRODUCT : POWERLINE 3200

REVISIONS TO SECTIONS: APPENDIX

PRODUCT APPLICATION : WATER-BASED CORROSION INHIBITOR.

-----SECTION 1----------HAZARDOUS INGREDIENTS----------

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC PRODUCT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION.

SODIUM NITRITE***;CAS#7632-00-0;OXIDIZER;POTENTIAL BLOOD TOXIN;TOXIC(ORAL INGESTION);PEL:NONE;TLV:NONE.

SODIUM MOLYBDATE***(MOLYBDIC ACID,DISODIUM SALT);CAS#7631-95-0;POSSIBLE RESPIRATORY IRRITANT;PEL:5MG/M3(AS MO);TLV:5MG/M3(AS MO).

-----SECTION 2----------TYPICAL PHYSICAL DATA----------

PH: AS IS (APPROX.) 12.6
FL.PT.(DEG.F): >200 SETA(CC)
VAPOR PRESSURE(mmHG): ND
VISC cps@70F: 4.2
EVAP.RATE: <1 ETHER=1
PHYSICAL STATE: LIQUID

ODOR: MILD
SP.GR.(70F)OR DENSITY: 1.184
VAPOR DENSITY(AIR=1): ND
%SOLUBILITY(WATER): 100
APPEARANCE: YELLOW
FREEZE POINT(DEG.F): 14

-----SECTION 3----------REACTIVITY DATA----------

STABLE.MAY REACT WITH STRONG OXIDIZERS.DO NOT CONTAMINATE.BETZ TANK CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

BETZ MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

PRODUCT: POWERLINE 3200
-----SECTION 4----------HEALTH HAZARD EFFECTS----------
ACUTE SKIN EFFECTS *** PRIMARY ROUTE OF EXPOSURE
SLIGHTLY IRRITATING TO THE SKIN
ACUTE EYE EFFECTS ***
SEVERE IRRITANT TO THE EYES
ACUTE RESPIRATORY EFFECTS ***
MISTS/AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT
CHRONIC EFFECTS OF OVEREXPOSURE***
PROLONGED OR REPEATED EXPOSURES MAY CAUSE BLOOD CELL DAMAGE OR IMPAIR BLOOD CELL FUNCTION.
MEDICAL CONDITIONS AGGRAVATED ***
NOT KNOWN

SYMPTOMS OF EXPOSURE ***
MAY CAUSE REDNESS OR ITCHING OF SKIN.

PRECAUTIONARY STATEMENT BASED ON TESTING RESULTS ***
MAY BE TOXIC IF ORALLY INGESTED.
-----SECTION 5----------FIRST AID INSTRUCTIONS----------
SKIN CONTACT***
REMOVE CONTAMINATED CLOTHING.WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES
EYE CONTACT***
IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT
INHALATION EXPOSURE***
REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY
INGESTION***
DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM
DO NOT INDUCE VOMITING.IMMED.CONTACT PHYSICIAN.DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER
-----SECTION 6----------SPILL,DISPOSAL AND FIRE INSTRUCTIONS---------
SPILL INSTRUCTIONS***
VENTILATE AREA,USE SPECIFIED PROTECTIVE EQUIPMENT.CONTAIN AND ABSORB ON ABSORBENT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL,OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.
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 NPDES PERMIT
PRODUCT(AS IS)-
INCINERATE OR BURY IN APPROVED LANDFILL
FIRE EXTINGUISHING INSTRUCTIONS***
FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).PROPER FIRE EXTINGUISHING MEDIA:
FLOOD WITH WATER.USE OF CO2 OR FOAM MAY NOT BE EFFECTIVE.

PRODUCT: POWERLINE 3200

-----SECTION 7----------SPECIAL PROTECTIVE EQUIPMENT----------

USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS.

VENTILATION PROTECTION***
ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS

RECOMMENDED RESPIRATORY PROTECTION***
IF VENTILATION IS INADEQUATE OR SIGNIFICANT PRODUCT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION***
RUBBER GLOVES
WASH OFF AFTER EACH USE.REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION***
SPLASH PROOF CHEMICAL GOGGLES

-----SECTION 8----------STORAGE AND HANDLING PRECAUTIONS----------

STORAGE INSTRUCTIONS***
KEEP DRUMS & PAILS CLOSED WHEN NOT IN USE.
DO NOT FREEZE.IF FROZEN,THAW AND MIX COMPLETELY PRIOR TO USE

HANDLING INSTRUCTIONS***
CONTAINS AN OXIDIZER. AVOID ALL CONTACT WITH REDUCING AGENTS, OILS, GREASES, ORGANICS AND ACIDS. DO NOT ALLOW TO DRY.

****

THIS MSDS COMPLIES WITH THE OSHA HAZARD COMMUNICATION STANDARD
HAROLD M. HERSH (ENVIRONMENTAL INFORMATION COORDINATOR)

****

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED IN THE TSCA INVENTORY
...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:
101 GALLONS DUE TO SODIUM NITRITE
...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE,THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: D002-CORROSIVE (PH)
...DOT HAZARD/UN#/ER GUIDE# IS: ORM-E(WHEN CONTAINER > RQ) NA9188/#31
...THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER OR REPRODUCTIVE TOXICITY: NONE PRESENT IN SIGNIFICANT AMOUNTS
...SARA SECTION 302 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS
...SARA SECTION 313 CHEMICALS: NONE PRESENT IN SIGNIFICANT AMOUNTS
...SARA SECTION 311 HAZARD CLASS: IMMEDIATE(ACUTE) AND DELAYED(CHRONIC)
...MICHIGAN CRITICAL MATERIALS: NONE PRESENT IN SIGNIFICANT AMOUNTS
NFPA/HMIS : HEALTH - 2 ; FIRE - 1 ; REACTIVITY - 0 ; SPECIAL - ALK ; PE - B

MATERIAL SAFETY DATA SHEET

NALCO

PRODUCT NALCO 8325 LIQUID

Emergency Telephone Number
Medical (708) 820-1510 (24 hours)

SECTION 1 PRODUCT IDENTIFICATION

TRADE NAME: NALCO 8325 LIQUID
DESCRIPTION: An aqueous blend of nitrite, molybdate, acrylate

NFPA 704M/HMIS RATING: 3/3 HEALTH 1/1 FLAMMABILITY 0/0 REACTIVITY 0 OTHER
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

SECTION 2 HAZARDOUS INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 14 for the nature of the hazard(s).

INGREDIENT(S)	CAS #	APPROX. %
Sodium hydroxide	1310-73-2	1-5
Sodium nitrite	7632-00-0	20-40
Sodium molybdate	7631-95-0	1-5

SECTION 3 PRECAUTIONARY LABEL INFORMATION

WARNING: Harmful or fatal if swallowed. Contains sodium nitrite. Causes blood system disorders when swallowed. Do not take internally. Causes irritation to skin and eyes. Do not get in eyes, on skin or on clothing. Wear goggles or face shield when handling.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

SECTION 4 FIRST AID INFORMATION

EYES: Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.

SKIN: Immediately flush with water for at least 15 minutes. For a large splash, flood body under a shower. Call a physician at once.

INGESTION: Induce vomiting. Give water. Call a physician at once.

INHALATION: Remove to fresh air. Treat symptoms. Call a physician at once.

NOTE TO PHYSICIAN: No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions,

MATERIAL SAFETY DATA SHEET

NALCO

PRODUCT NALCO 8325 LIQUID

Emergency Telephone Number
Medical (708) 820-1810 (24 hours)

SECTION 4 FIRST AID INFORMATION (CONTINUED)

do not induce vomiting or give water.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.

SECTION 5 HEALTH EFFECTS INFORMATION

PRIMARY ROUTE(S) OF EXPOSURE: Eye, Skin

EYE CONTACT: Can cause severe irritation.
SKIN CONTACT: Can cause severe irritation.
INGESTION: Can be harmful or fatal.

SYMPTOMS OF EXPOSURE:
CHRONIC: Sodium nitrite. Causes formation of methaemoglobinaemia leading to cyanosis and possible death if ingested. Repeated ingestion of small amounts causes blood pressure to drop, rapid pulse, headaches and visual disturbances. Causes central nervous system effects, (e.g. headaches, tremors, drowsiness and convulsions).

AGGRAVATION OF EXISTING CONDITIONS: Sodium nitrite. Pregnant women are particularly sensitive to methaemoglobinaemia.

SECTION 6 TOXICOLOGY INFORMATION

ACUTE TOXICITY STUDIES: Acute toxicity studies have not been conducted on this product, but toxicity studies of the ingredient(s) in Section 2 have been reviewed. The results are shown below.

ACUTE ORAL TOXICITY (ALBINO RATS):
Sodium nitrite LD_{50} = 85 mg/kg

SECTION 7 PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Amber	FORM: Liquid	ODOR: None
DENSITY:	10.9 lbs/gal.	
pH (NEAT) =	12.5 - 14.0	ASTM E-70
VISCOSITY:	9 cps @ 60 Degrees F	ASTM D-2983
FREEZE POINT:	-6 Degrees F	ASTM D-1177
FLASH POINT:	Greater than 220 Degrees F (PMCC)	ASTM D-93

NOTE: These physical properties are typical values for this product.

NALCO

PRODUCT NALCO 8325 LIQUID

Emergency Telephone Number

Medical (708) 820-1810 (24 hours)

SECTION 8 FIRE AND EXPLOSION INFORMATION

FLASH POINT: Greater than 220 Degrees F (PMCC) ASTM D-93

EXTINGUISHING MEDIA: Not applicable

UNUSUAL FIRE AND EXPLOSION HAZARD: None

SECTION 9 REACTIVITY INFORMATION

INCOMPATIBILITY: Avoid contact with strong acids (eg. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) which can generate heat, splattering or boiling and the release of toxic fumes.

STORAGE: Storage tanks should be stainless steel or polyethylene.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO2 may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

SECTION 10 PERSONAL PROTECTION EQUIPMENT

RESPIRATORY PROTECTION: If it is possible to generate significant levels of vapors or mists, a NIOSH approved or equivalent respirator is recommended.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended. Additionally, local exhaust ventilation is recommended where vapors, mists or aerosols may be released.

PROTECTIVE EQUIPMENT: Wear gloves, boots, apron and a face shield with chemical splash goggles (ANSI Z 87.1 requirements and selection of gloves, goggles, shoes, etc.). A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

SECTION 11 SPILL AND DISPOSAL INFORMATION

IN CASE OF TRANSPORTATION ACCIDENTS, CALL THE FOLLOWING 24-HOUR TELEPHONE NUMBER (708-820-1510)

NALCO

PRODUCT NALCO 8325 LIQUID

Emergency Telephone Number
Medical (708) 820-1810 (24 hours)

SECTION 11 SPILL AND DISPOSAL INFORMATION (CONTINUED)

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shoval reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

DISPOSAL: If this product becomes a waste, it meets the criteria of a hazardous waste as defined under the Resources Conservation and Recovery Act (RCRA) 40 CFR 261. Hazardous Waste D002.

As a hazardous liquid waste, it must be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to a licensed industrial waste landfill (Hazardous Waste Treatment, Storage and Disposal facility). A hazardous liquid waste can also be deep-well injected in accordance with local, state, and federal regulations.

SECTION 12 ENVIRONMENTAL INFORMATION

If released into the environment, see CERCLA in Section 14.

SECTION 13 TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME/HAZARD CODE - HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
CODE-E NA 9188
CONTAINS - SODIUM NITRITE

SECTION 14 REGULATORY INFORMATION

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our hazard evaluation, the following ingredients in this product are hazardous and the reasons are shown below.

Sodium hydroxide - Severe irritant
Sodium nitrite - Systemic effects
Sodium molybdate - Irritant

Sodium hydroxide - Ceiling 2 mg/m3 ACGIH/TLV

NALCO

PRODUCT NALCO 8325 LIQUID

Emergency Telephone Number
Medical (708) 820-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION (CONTINUED)

Sodium molybdate (soluble, as Mo) = TWA 5 mg/m3 ACGIH/TLV

Sodium hydroxide = Ceiling 2 mg/m3 OSHA/PEL
Sodium molybdate (soluble, as Mo) = TWA 5 mg/m3 OSHA/PEL

CERCLA/SUPERFUND, 40 CFR 117, 302:
This product contains sodium nitrite, a Reportable Quantity (RQ) substance and if 400 pounds of product are released, it requires notification to the NATIONAL RESPONSE CENTER, WASHINGTON, D. C. (1-800-424-8802).

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 ingredients 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 EPA hazard categories:

XX Immediate (acute) health hazard
— Delayed (chronic) health hazard
— Fire hazard
— Sudden release of pressure hazard
— Reactive hazard

Under Section 311, submittal of MSDS's or a list of product names to the local emergency planning commission, state emergency response commission and local fire department is required after October 17, 1987 if you have:

- 10,000 pounds or more of a hazardous substance, or
- 500 pounds or the threshold planning quantity, whichever is less, of an extremely hazardous substance.

After October 17, 1988, MSDS(s), or a list of product names for all hazardous substances between zero (0) and 10,000 pounds, not previously reported, must be submitted.

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

MATERIAL SAFETY DATA SHEET

NALCO

PRODUCT NALCO 8325 LIQUID

Emergency Telephone Number
Medical (708) 920-1510 (24 hours)

SECTION 14 REGULATORY INFORMATION (CONTINUED)

Sodium hydroxide 1310-73-2 1-5

TOXIC SUBSTANCES CONTROL ACT (TSCA):
The chemical ingredients in this product are on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), 40 CFR 261 SUBPART C & D:
If this product becomes a waste, it does meet the criteria of a hazardous waste as defined under RCRA 40 CFR 261 (consult Section 11).

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15/ formerly Sec. 307, 40 CFR 116/formerly Sec. 311:
This product contains the following ingredients covered by the Clean Water Act:

Sodium nitrite - Section 311
Sodium hydroxide - Section 311

CLEAN AIR ACT, 40 CFR 60, SECTION 111, 40 CFR 61, SECTION 112:
This product does not contain ingredients covered by the Clean Air Act.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
None of the chemicals on the current Proposition 65 list are known to be present in this product.

MICHIGAN CRITICAL MATERIALS:
This product does not contain ingredients listed on the Michigan Critical Materials Register.

STATE RIGHT TO KNOW LAWS:
The following states identify the ingredients shown below as hazardous:

California, Illinois, Pennsylvania - Sodium nitrite
California, Illinois, - Sodium molybdate

Regulated in these states using the TLV for sodium hydroxide as a criteria for listing.

SECTION 15 ADDITIONAL INFORMATION

None

NALCO

PRODUCT NALCO 8325 LIQUID

Emergency Telephone Number
Medical (708) 820-1510 (24 hours)

SECTION 16 USER'S RESPONSIBILITY

This product material safety data sheet provides health and safety information. The product is to be used in applications consistant 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 ensure safe workplace operations. Please consult your local sales representative for any further information.

SECTION 17 BIBLIOGRAPHY

ANNUAL REPORT ON CARCINOGENS, U.S. Department of Health and Human Services, Public Health Service, PB 83-135855, 1983.

CASARETT AND DOULL'S TOXICOLOGY, THE BASIC SCIENCE OF POISONS, Doull, J., Klaassen, C. D., and Amdur, M. O., eds., Macmillian Publishing Company, Inc., N. Y., 2nd edition, 1980.

CHEMICAL HAZARDS OF THE WORKPLACE, Proctor, N. H., and Hughes, J. P., eds., J. P. Lipincott Company, N.Y., 1981.

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS, Sax, N. Irving, ed., Van Nostrand Reinhold Company, N.Y., 6th edition, 1984.

IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO MAN, Geneva: World Health Organization, International Agency for Research on Cancer, 1972-1977.

PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, Clayton, G. D., Clayton, F. E., eds., John Wiley and Sons, N. Y., 3rd edition, Vol. 2 A-C, 1981.

REGISTRY OF TOXIC EFFECTS ON CHEMICAL SUBSTANCES, U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, 1983 supplement of 1981-1982 edition, Vol. 1-3, CRC, 1984.

Title 29 Code of Federal Regulations Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA).

THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS IN THE WORKROOM ENVIRONMENT WITH INTENDED CHANGES, American Conference of Governmental Industrial Hygienists, CIH.

NALCO

PRODUCT NALCO 8325 LIQUID

Emergency Telephone Number
Medical (708) 820-1510 (24 hours)

SECTION 17 BIBLIOGRAPHY (CONTINUED)

PREPARED BY: Ricky A. Stackhouse PhD., Toxicologist
DATE CHANGED: 08/03/89 DATE PRINTED: 06/22/90

Material Safety Data Sheet **Effective:** 11/29/88 Section 1

Manufacturer's Name Calgon Corporation
Address(Number, Street, City, State, and ZIP Code)
P.O. Box 1346, Pittsburgh, PA 15230
Emergency Phone **Information Phone**
412/777-8000

Name of Preparer
Patricia A. Pacella

Trade Name pHreeGuard 2350
Chemical Name Anionic Polymer Solution
GPUN MSDS No. P409.00

Formula Multicomponent

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(
107-21-1	Ethylene glycol	-2	50 ppm	n/1
1310-73-2	Sodium hydroxide	-4	2 mg/m3	2 mg/

Other Notes:
n/s = not stated
n/l = not listed

Physical Data Section 3

Boiling Point C(F)..... > 212 F
Specific Gravity (H2O=1). 1.35-1.38
Percent Volatile..... - 60
By Volume (%)

Melting Point C(F)..... n/s
Vapor Pressure (mm Hg.).. *
Evaporation Rate..... n/s

Vapor Density (Air=1).... *
pH..... 12-13.5

Solubility in Water..... Complet
Odor Threshhold..... n/s

Appearance and Odor: Clear amber liquid.
* Similar to Water

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
>200F

Autoignition Temp.
Not Stated

Flammable Limits	Lel	Uel
% In Air	n/s	n/s

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
0*	2*	0*	n/s

Extinguishing Media
Not flammable or combustible.
Special Fire Fighting Procedures
Excerise caution when fighting any chemical fire. A SCBA and protective clothing are essential.

Unusual Fire and Explosion Hazards
None

Threshhold Limit Value
See Section 2

Routes of Exposure
Inhalation, Ingestion, Skin and Eyes

Symptoms of Overexposure
ACUTE: INGESTION: Because of the high pH, this product may be expected to cause severe irritation or burns to the mouth, throat and gastrointestinal tract. This product contains ethylene glycol which has been reported to cause intoxication, CNS depression (incoordination, dizziness), respiratory failure, and liver and kidney damage. INHALATION: May be expected to present a low potential inhalation hazard. If misted or sprayed, this product may produce respiratory tract irritation. SKIN: Not expected to produce systemic toxicity if absorbed through skin. May be expected to produce severe skin damage (burns) upon contact. Severity of burn is generally determined by the concentration of solution & duration of exposure. No info available to suggest *

Effects or Risks From Exposure
* product may produce an allergic skin reaction. EYE: May be expected to produce severe eye damage (burns) upon contact with the eyes.

SUBCHRONIC, CHRONIC, OTHER: No applicable information was found concerning adverse health effects resulting from subchronic or chronic exposure to the product.

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
EYE: In case of contact immediately flush with plenty of water for at least 15 minutes. See medical aid.
SKIN: In case of contact, wash with soap and plenty of water for at least 15 minutes while removing contaminated clothing. Seek medical aid.
INGESTION: If swallowed, do not induce vomiting. Give large quantities of water. Seek medical aid. Never give anything by mouth to an unconscious person.
INHALATION: Not applicable.

Note to Physician
Not Stated

Reactivity Data — Section 6

Stability: Unstable Stable X

Conditions to Avoid:
Unknown

Incompatability (Materials to avoid):
Strong oxidizers

Hazardous Decomposition Products:
Oxides of nitrogen

Hazardous Polymerization: May Occur Will Not Occur X

Conditions to Avoid:
n/s

Other Comments:
n/s

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Dispose of in accordance with local, state and federal regulations. Dike area to contain as much spilled material as possible. Remove any remaining material by absorbing on vermiculite or other suitable absorbing material and place in a sealed metal container for disposal.

Waste Disposal Method:
Bury in an approved landfill, Dispose of in accordance with local, state, and federal regulations. This product as sold would be considered a RCRA hazardous waste as defined in 40CXFR Part 216.22 for corrosivity. The EPA Hazardous Waste Number is D002.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
Not required, however, if the TLV or PEL concentration for sodium hydroxide or ethylene glycol are exceeded, then an approved NIOSH/MSHA respiratory should be used.

Ventilation:
Local Exhaust Local exhaust ventilation recommended.
Mechanical Mechanical ventilation recommended.
Special Use only in well-ventilated areas that will maintain air levels
Other below limits established by local, state, and federal regulation

Protective Gloves:
Rubber gloves required

Eye Protection:
Chemical splash goggles and face shield

Other Protective Equipment:
Rubber Apron

Special Precautions — Section 9

Precautions to be taken in handling and storing:
DANGER!
May cause severe eye and skin damage.
May be harmful if swallowed.
Do not get in eyes, on skin or clothing.
Avoid breathing mists and vapors.
Wear chemical splash goggles or full face shield, rubber gloves and protective clothing when handling.
Wash thoroughly after handling.
Other Precautions:
Keep container closed when not in use.
Use only in well-ventilated areas that will maintain air levels below limits established by local, state, and federal regulations.

OTHER PRECAUTIONS: None

Product Warning Label Statement — Section 10

n/s

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. D002
UN/NA ID Number..... n/s
DOT Shipping Name..... n/s
DOT Labels..... n/s
IMCO Class..... n/s
DOT Hazard Class. n/s
Packaging Requirements
n/s

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... n/s
Product CAS No... n/s
Product Codes: n/s n/s n/s n/s
General Comments:
Product used at TMI.
Update of MSDS# P306.

IDN # 015702840

Material Safety Data Sheet Effective: 11/27/85 Section 1

Manufacturer's Name Olin Corporation
Address(Number, Street, City, State, and ZIP Code)
120 Long Ridge Road, Stamford, Connecticut 06904
*Emergency Phone Information Phone Name of Preparer

Trade Name Caustic Soda 50% Commercial Grade
Chemical Name Sodium Hydroxide 50% Commercial Grade
GPUN MSDS No. C428.00 Formula NaOH

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
1310-73-2	Sodium Hydroxide	50	2 mg/m3 *	2 mg/m3

Other Notes:
n/s = not stated
n/d = no data
n/a = not applicable
*Ceiling Value

Physical Data Section 3

Boiling Point C(F)..... 142-148 C
Specific Gravity (H2O=1). 1.54
Percent Volatile..... n/d
By Volume (%)

Vapor Density (Air=1).... n/d
pH..... >12

Melting Point C(F)..... n/d
Vapor Pressure (mm Hg.).. n/d
Evaporation Rate..... n/d
n/d

Solubility in Water..... Soluble
Odor Threshhold..... n/s

Appearance and Odor: Clear colorless solution

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
n/a

Autoignition Temp.
n/s

Flammable Limits	Lel	Uel
% in Air	n/d	n/d

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
0*	3*	1*	COR

Extinguishing Media
Choose media suitable for surrounding materials. Non-Combustible.
Special Fire Fighting Procedures
Use NIOSH/MSHA approved self-contained breathing apparatus where this material is involved in a fire.

Unusual Fire and Explosion Hazards
n/s

Threshhold Limit Value
See Section 2. LD50 = n/d
LC50 = n/d

Routes of Exposure
Eyes, Skin, Inhalation

Symptoms of Overexposure
Causes burns and rapid destructions to all tissue contacted.
Burns to exposed tissue frequently result in deep ulceration.

Effects or Risks From Exposure
See Section 5A.
Product is not known to be carcinogenic nor mutagenic.

Listed as Carcinogen or Potential Carcinogen
NTP No I.A.R.C. No OSHA No

Emergency and First Aid Procedures
SKIN: :Flush with water for 15 minutes. Call a physician.
EYES: Flush with water for 15 minutes. Call a physician.
INGESTION: Wash out mouth with water. Drink large quantities of water. Do not induce vomiting. Call a physician.

Note to Physician
n/s

Reactivity Data — Section 6

Stability: Unstable Stable X
Conditions to Avoid:
Temperatures which may affect the materials used in equipment.

Incompatability (Materials to avoid):
Contact of acid with organic material (such as chlorates, carbides, fulminates and picrates) may cause fire and explosions. Contact of acid with metals may *
Hazardous Decomposition Products:
Toxic gases and vapor (e.g., sulfur dioxide, sulfuric acid vapors, sulfur trioxide) ay be released when sulfuric acid decomposes.
Hazardous Polymerization: May Occur Will Not Occur X
Conditions to Avoid:
Not stated

Other Comments:
* from toxic sulfur dioxide gas and flammable hydrogen gas.

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Remove all ignition sources. Ventilate area. Stop and contain leak or spill. Dike with inert material (sand, earth, etc.). Collect into containers for reclaim or disposal. Harmful to aquatic life in very low concentrations. May be dangerous if it enters water intake; fish toxicity critical concentration= 10 mg/l; 7.34 mg/l/48 hrs-:ymneae Palustris-0-100% mortality. Lime, limestone, sodium carbonate (soda ash), sodium bicarbonate, dilute sodium hydroxide, dilute aqua ammonia.

Waste Disposal Method:
Consult federal, state, and local regulations on chemical waste disposal. May be possible to neutralize, absorb and dispose of in a secure sanitary landfill site.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
NIOSH/MSHA approved air purifying resp equipped with acid gas/fume, dust, mist cartridges for concentrations up to 10 mg/m3. Air-supplied resp for higher *

Ventilation:
Local Exhaust Not stated
Mechanical Sufficient
Special Not stated
Other Not stated

Protective Gloves:
Rubber gloves
Eye Protection:
Tight-fitting chemical goggles and face shield.
Other Protective Equipment:
Rubber boots and full protective clothing. Safety showers and eyewash fountains should be installed in storage and handling areas.
* or unknown concentrations.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Carbon steel or stainless steel materials are suitable for use for acid concentrations greater than 93%. Store above freezing point. Store in a dry, well-ventilated location away from combustibles, oxidizers, bases, or metallic powders.

Other Precautions:
Keep away from ignition sources. Sulfuric acid will attack some forms of plastics and coatings. Always add acid to water--not water to acid. If kept in upper floors of building, floors should be acid proof with drains to a recovery tank.

Product Warning Label Statement — Section 10

Not stated

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. n/s
UN/NA ID Number..... n/s
DOT Shipping Name..... n/s
DOT Labels..... n/s
Packaging Requirements
n/s

IMCO Class..... n/s
DOT Hazard Class. n/s

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... n/s
Product Codes: n/s n/s

Product CAS No... n/s
n/s n/s

General Comments:
Product used at TMI.

IDN #
021340470
002748111

Material Safety Data Sheet **Effective:** 05/01/83 **Section 1**

Manufacturer's Name Chem Tek Services, Inc.
Address(Number, Street, City, State, and ZIP Code)
P.O. Box 1424, Malvern, PA 19355
Emergency Phone **Information Phone** **Name of Preparer**
215/436-4161 Not Stated

Trade Name CT 6906
Chemical Name Carboxylated Polyacrylamide
GPUN MSDS No. C473.00 **Formula** $CH_2CH(COONa)CH_2CH$

Hazardous Ingredients **Section 2**

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
	Not stated	n/s	n/s	n/s

Other Notes:
n/s-Not stated. CT 6906 is not considered hazardous under current federal and state regulations.

Physical Data **Section 3**

Boiling Point C(F)..... n/a
Specific Gravity (H2O=1). n/a
Percent Volatile..... 3-5 %
By Volume (%)

Vapor Density (Air=1).... n/a
pH..... n/s

Melting Point C(F)..... n/a
Vapor Pressure (mm Hg.).. n/a
Evaporation Rate..... n/a

Solubility in Water..... Complete
Odor Threshhold..... Odorless

Appearance and Odor: White, odorless granular powder.

Fire and Explosion Hazard Data **Section 4**

Flash Point (Method Used)
Not applicable

Autoignition Temp.
Not stated

Flammable Limits	Lel	Uel
In air % by vol.	n/s	n/s

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
n/s	n/s	n/s	n/s

Extinguishing Media
CO_2, foam.
Special Fire Fighting Procedures
None

Unusual Fire and Explosion Hazards
None

Threshhold Limit Value
Non-toxic

Routes of Exposure
Inhalation, ingestion, skin and eyes

Symptoms of Overexposure
Not stated

Effects or Risks from Exposure
Not stated

Listed as Carcinogen or Potential Carcinogen
NTP Unknown **I.A.R.C.** Unknown **OSHA** Unknown

Emergency and First Aid Procedures
Not stated

Note to Physician
Not stated

CT 6906

Reactivity Data — Section 6

Stability: Unstable Stable X

Conditions to Avoid:
Not stated

Incompatability (Materials to avoid):
Contact with other materials has no known hazardous reaction products.

Hazardous Decomposition Products:
Not applicable

Hazardous Polymerization: May Occur Will Not Occur X

Conditions to Avoid:
Not stated

Other Comments:
Not stated

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Sweep up in a disposable container

Waste Disposal Method:
Incinerate or bury in landfill.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
Dust mask

Ventilation:
Local Exhaust Not required
Mechanical Not required
Special None
Other Not stated

Protective Gloves:
Not required

Eye Protection:
Safety goggles or glasses recommended.

Other Protective Equipment:
Not stated

Material Safety Data Sheet Effective: 05/01/83 Section 1

Manufacturer's Name Chem Tek Services, Inc.
Address(Number, Street, City, State, and ZIP Code)
P.O. Box 1424, Malvern, PA 19355
Emergency Phone Information Phone Name of Preparer
215/436-4161 Not Stated

Trade Name CT 6528
Chemical Name Cationic Polymer
GPUN MSDS No. C474.00 Formula Proprietary

Section 2

Hazardous Ingredients

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
	Not stated	n/s	n/s	n/s

Other Notes:
n/s-Not stated. CT 6528 is not considered hazardous under current regulations.

Section 3

Physical Data

Boiling Point C(F)..... n/a
Specific Gravity (H2O=1). 1.07
Percent Volatile..... 70 F
By Volume (%)

Vapor Density (Air=1).... n/a
pH..... n/s

Melting Point C(F)..... n/a
Vapor Pressure (mm Hg.).. n/a
Evaporation Rate..... n/a

Solubility in Water..... Complete
Odor Threshhold..... Mild

Appearance and Odor: Amber liquid with a mild odor.

Section 4

Fire and Explosion Hazard Data

Flash Point (Method Used)
Not applicable

Autoignition Temp.
Not stated

Flammable Limits	Lel	Uel
In air % by vol.	n/s	n/s

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
n/s	n/s	n/s	n/s

Extinguishing Media
Water
Special Fire Fighting Procedures
None

Unusual Fire and Explosion Hazards
None

Health Hazard Data Section 5(A,B,C)

Threshhold Limit Value
See section 2

Routes of Exposure
Inhalation, ingestion, skin and eyes

Symptoms of Overexposure
Skin: Prolonged contact can cause moderate irritation. Eyes: Can cause moderate irritation, redness, tearing.

Effects or Risks From Exposure
See section 5A

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
Immediate removal from skin or eyes by large amounts ofwater. Normal measures of personal hygiene is adequate.

Note to Physician
Not stated

Reactivity Data — Section 6

Stability: Unstable Stable X
Conditions to Avoid:
Not state

Incompatability (Materials to avoid):
None specific

Hazardous Decomposition Products:
CO, CO2 by thermal decomposition.

Hazardous Polymerization: May Occur Will Not Occur X
Conditions to Avoid:
Not stated

Other Comments:
Not stated

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
The area can be slushed down with copius quantities of water, or covered with inert absorbant material. Spilled material creates very slippery surfaces.

Waste Disposal Method:
Incinerate or landfill waste in accordance with federal, state and local regulations.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
Not required

Ventilation:
Local Exhaust Adequate local ventilation recommended.
Mechanical Not required
Special None
Other Not stated

Protective Gloves:
Neoprene or rubber gloves recommended.
Eye Protection:
Safety goggles recommended.
Other Protective Equipment:
Rubber apron.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Store in a protected area to prevent mechanical damage. Store in stainless steel, fiberglass or plastic container.

Other Precautions:
Keep from freezing. Avoid mild steel, aluminum or copper.

Product Warning Label Statement — Section 10

Not stated

Shipping Information — Section 11

EPA Hazardous Waste ID Number..
UN/NA ID Number.....
DOT Shipping Name.....
DOT Labels.....
Packaging Requirements

IMCO Class.....
DOT Hazard Class.

Comments and Reference Numbers — Section 12

Safety Office File No...
Cross Ref. No...
Product Codes:
General Comments:

Product CAS No...

Material Safety Data Sheet Effective: 07/29/82 Section 1

Manufacturer's Name American Cyanamid Company
Address(Number, Street, City, State, and ZIP Code)
Wayne, NJ 07470

Emergency Phone	Information Phone	Name of Preparer
Not Stated	Not Stated	Marvin A. Friedman

Trade Name Aerofroth 65 Frother
Chemical Name Not Stated
GPUN MSDS No. A560.00 Formula HO(C3H6O)nH

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
	n/s			

Other Notes:
n/s = not stated

Physical Data Section 3

Boiling Point C(F).....	271F/133C	Melting Point C(F).....	-76F/-60C
Specific Gravity (H2O=1).	1.0009	Vapor Pressure (mm Hg.)..	n/a
Percent Volatile..... By Volume (%)	~100	Evaporation Rate.....	n/a
Vapor Density (Air=1)....	n/a	Solubility in Water.....	Complete
pH.....	n/a	Odor Threshhold.....	n/s

Appearance and Odor: Colorless liquid; faint, sweet odor.

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
>200F/>93.3C (CC)

Autoignition Temp.
n/a

Flammable Limits	Lel	Uel
% In Air	n/a	n/a

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
1*	1*	0*	n/s

Extinguishing Media
Water Spray, Alcohol Foam, CO2, or Dry Chemical to extinguish fires.
Special Fire Fighting Procedures
Wear self-contained, positive pressure breathing apparatus and full firefighting protective clothing. See Exposure Control Methods for special protective clothing.
Unusual Fire and Explosion Hazards
n/s

Threshhold Limit Value
See Section 2.

Routes of Exposure
n/s

Symptoms of Overexposure
n/s

Effects or Risks From Exposure
Polypropylene glycol has an acute oral (rat) and acute dermal (rabbit) LD50 value of 2.41 g/kg and 20.0 ml/kg, respectively. Minimal eye and skin irritation were produced during primary irritation studies with polypropylene glycol.

Listed as Carcinogen or Potential Carcinogen
NTP Unknown **I.A.R.C.** Unknown **OSHA** Unknown

Emergency and First Aid Procedures
No specific first air procedures are necessary for accidental exposure to this product.

Note to Physician
n/s

Reactivity Data — Section 6

Stability: Unstable Stable X

Conditions to Avoid:
None known.

Incompatability (Materials to avoid):
Strong oxidizers; strong acids.

Hazardous Decomposition Products:
Thermal decomposition or combustion may product CO and/or CO2.

Hazardous Polymerization: May Occur Will Not Occur X

Conditions to Avoid:
None known.

Other Comments:
n/s

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
In addition to the protective clothing/equipment in Exposure Control Methods, wear impervious boots. Cover spills with some inert absorbent material; sweep up and place in a waste disposal container. Flush area with water.

Waste Disposal Method:
Disposal must be made IAW applicable governmental regulations.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
Not generally required during normal operations.

Ventilation:
Local Exhaust Engineering controls are not usually necessary, if good
Mechanical hygiene practices are strictly followed.
Special n/s
Other n/s

Protective Gloves:
Wear impervious gloves to prevent skin contact.

Eye Protection:
n/s

Other Protective Equipment:
Wear impervious boots in the event of spills.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
None

Other Precautions:
n/s

Product Warning Label Statement — Section 10

No Warning Statement.

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. n/s
UN/NA ID Number..... n/s
DOT Shipping Name..... n/s
DOT Labels..... n/s
Packaging Requirements
n/s

IMCO Class..... n/s
DOT Hazard Class. n/s

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... n/s
Product Codes: n/s n/s

Product CAS No... n/s
n/s n/s

General Comments:
Product used at TMI.
No IDN# Stated.

Material Safety Data Sheet Effective: 05/01/83 Section 1

Manufacturer's Name Aqua Kinetics, Inc.
Address(Number, Street, City, State, and ZIP Code)
P.O. Box 249, Irwin, PA 15642
Emergency Phone Information Phone Name of Preparer
412/751-4268 Not stated

Trade Name Unifloc 435
Chemical Name Polyamines in Water Solution
GPUN MSDS No. U009.00 Formula Not applicable

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
7732-18-5	Water	75	n/s	n/s
	Polyamine	25	n/s	n/s

Other Notes:
n/s- not stated

Physical Data Section 3

Boiling Point C(F)..... n/a
Specific Gravity (H2O=1). 1.08-1.18
Percent Volatile..... n/a
By Volume (%)

Vapor Density (Air=1).... n/a
pH..... n/s

Melting Point C(F)..... n/s
Vapor Pressure (mm Hg.).. n/a
Evaporation Rate..... n/s

Solubility in Water..... 100%
Odor Threshhold..... n/s

Appearance and Odor: Amber liquid light, musty odor.

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
Not applicable

Autoignition Temp.
Not stated

Flammable Limits	Lel	Uel
In Air % by Vol.	n/s	n/s

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
n/s	n/s	n/s	n/s

Extinguishing Media
Water
Special Fire Fighting Procedures
May produce CO or CO2 upon incineration.

Unusual Fire and Explosion Hazards
Not applicable

Threshhold Limit Value
None established

Routes of Exposure
Not stated

Symptoms of Overexposure
Not stated

Effects or Risks From Exposure
None expected

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
Inhalation: Not applicable
Ingestion: Call physician and follow procedure for polyamine
Eyes: Flush with water/product has pH 4.5-5
Skin: Flush with water

Note to Physician
Not stated

Reactivity Data — Section 6

Stability: Unstable Stable X

Conditions to Avoid:
None

Incompatability (Materials to avoid):
None specific

Hazardous Decomposition Products:
Thermal decomposition may produce CO and CO2.

Hazardous Polymerization: May Occur Will Not Occur X

Conditions to Avoid:
None

Other Comments:
Not stated

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Wash with water or remove with inert absorbent material.
Spilled material creates very slippery surface.

Waste Disposal Method:
Incinerate or landfill

Special Protection Information — Section 8

Respiratory Protection (Specify type):
Not required

Ventilation:
Local Exhaust Not required
Mechanical Not required
Special None
Other None

Protective Gloves:
Not required
Eye Protection:
splash-proof goggles
Other Protective Equipment:
Unifloc 435 is cationic ploymer and will runin clothing if in constant contact.

Uniflac 435

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Store in stainless steel fiber glass or plastic container.
Avoid mild steel, aluminum or copper.

Other Precautions:
None

Product Warning Label Statement — Section 10

Not stated

Shipping Information — Section 11

EPA Hazardous Waste ID Number..
UN/NA ID Number.....
DOT Shipping Name.....
DOT Labels.....
Packaging Requirements

IMCO Class.....
DOT Hazard Class.

Comments and Reference Numbers — Section 12

Safety Office File No...
Cross Ref. No...
Product Codes:
General Comments:

Product CAS No...

Material Safety Data Sheet Effective: 99/99/99 Section 1

Manufacturer's Name Chemtek, Inc.
Address(Number, Street, City, State, and ZIP Code)
P.O. Box 1424, Malvern, PA 19355
Emergency Phone Information Phone Name of Preparer
(215)344-7447 Not Stated

Trade Name Chemtek 6101
Chemical Name Cationic Copolymer
GPUN MSDS No. C544.00 Formula Multicomponent Liquid

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
	No Hazardous Ing. per OSHA	n/s	n/s	n/s

Other Notes:
n/s = not stated
n/a = not applicable

Physical Data Section 3

Boiling Point C(F)..... <212
Specific Gravity (H2O=1). 1.013
Percent Volatile..... 90%
By Volume (%)

Vapor Density (Air=1).... = H2O
pH..... 8.0

Melting Point C(F)..... n/a
Vapor Pressure (mm Hg.).. = H2O
Evaporation Rate..... 1
Water = 1

Solubility in Water..... Complete
Odor Threshhold..... n/s

Appearance and Odor: Clear to pale yellow viscous liquid.

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
Not flammable

Autoignition Temp.
n/s

Flammable Limits	Lel	Uel
n/a	n/a	n/a

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
0*	0*	0*	n/s

Extinguishing Media
Product is not flammable.
Special Fire Fighting Procedures
None.

Unusual Fire and Explosion Hazards
None.

Chemtek 6101 Section 5(A,B,C)

Health Hazard Data

Threshhold Limit Value
n/s

Routes of Exposure
n/s

Symptoms of Overexposure
n/s

Effects or Risks From Exposure
SKIN AND EYE IRRITATION: No eye irritation in rabbits.

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
Good first aid should be followed in all cases of exposure.
In case of eye contact, glush with plenty of water for at least 15 minutes.
If irritation develops, call a physician.

Note to Physician
n/s

Reactivity Data — Section 6

Stability: Unstable Stable X

Conditions to Avoid:
n/s

Incompatability (Materials to avoid):
Strong acids and bases.

Hazardous Decomposition Products:
Unknown.

Hazardous Polymerization: May Occur Will Not Occur X

Conditions to Avoid:
n/s

Other Comments:
n/s

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Dispose of in accordance with local, state and federal regulations. Dike area to contain as much spilled material as possible. Remove any remaining material by absorbing on vermiculite or other suitable absorbing material and place in a sealed metal contianer for disposal. Hose spill area since product can make floors slippery.

Waste Disposal Method:
Dispose of in a landfill in accordance with local, state and federal regulations.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
Not required.

Ventilation:
Local Exhaust Normal.
Mechanical Not required.
Special None.
Other n/s

Protective Gloves:
Not required.
Eye Protection:
Not required.
Other Protective Equipment:
None required.

Chemtek 6101

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Wash thoroughly after handling.
Keep container closed.
Exercise caution in the storage and handling of all chemical substances.

Other Precautions:
None.

Product Warning Label Statement — Section 10

n/s

Shipping Information — Section 11

EPA Hazardous Waste ID Number..
UN/NA ID Number.....
DOT Shipping Name.....
DOT Labels.....
Packaging Requirements

IMCO Class.....
DOT Hazard Class.

Comments and Reference Numbers — Section 12

Safety Office File No...
Cross Ref. No...
Product Codes:
General Comments:

Product CAS No...

Material Safety Data Sheet Effective: 99/99/99 Section 1

Manufacturer's Name Chemtek, Inc.
Address(Number, Street, City, State, and ZIP Code)
P.O. Box 1424, Malvern, PA 19355
Emergency Phone Information Phone Name of Preparer
(215)344-7447 Not Stated

Trade Name 6034
Chemical Name Proprietary
GPUN MSDS No. =310.00 Formula Proprietary

Section 2
Hazardous Ingredients

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
7446-70-0	Aluminum Chloride	n/s	n/s	n/s
	Inorganic Salt/Polyacrylamide	n/s	n/s	n/s

Other Notes:
n/s = not stated
n/a = not applicable
n/d = not determined

Section 3
Physical Data

Boiling Point C(F)..... 220
Specific Gravity (H2O=1). 1.127-1.28
Percent Volatile..... 49.3 by wt
By Volume (%)

Vapor Density (Air=1).... n/d
pH..... <1

Melting Point C(F)..... n/d
Vapor Pressure (mm Hg.).. n/d
Evaporation Rate..... n/d

Solubility in Water..... 100%
Odor Threshhold..... n/s

Appearance and Odor: Pale yellow - slight odor.

Section 4
Fire and Explosion Hazard Data

Flash Point (Method Used)
n/a

Autoignition Temp.
n/s

Flammable Limits	Lel	Uel
n/s	n/s	n/s

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
0	0	0	n/s

Extinguishing Media
Non-flammable.
Special Fire Fighting Procedures
May decompose to hydrogen chloride in a fire. If fumes are present, wear a face mask with acid gas cartridge or self-contained breathing apparatus.

Unusual Fire and Explosion Hazards
In a fire, this product may build up pressure and rupture a sealed container. Spray container with water to keep cool.

Health Hazard Data Section 5(A,B,C)

Threshhold Limit Value
n/s

Routes of Exposure
n/d

Symptoms of Overexposure
Eye irritation, redness, soreness.

Effects or Risks From Exposure
n/s

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
EYES: Immediately flush with large quantities of water for 15 minutes. See a physician.
SKIN: Flush affected area with water for 15 minutes. If irritation persists, seek medical attention.

Note to Physician
n/s

Reactivity Data — Section 6

Stability: Unstable Stable X
Conditions to Avoid:
n/s

Incompatability (Materials to avoid):
Alkalies, metal unlined vessels.

Hazardous Decomposition Products:
None.

Hazardous Polymerization: May Occur Will Not Occur X
Conditions to Avoid:
n/s

Other Comments:
n/s

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Contain major spills to keep out of water sources and sewers.
Minor residue may be washed off and neutralized in soda ash or absorbed on earth, sand or vermiculite

Waste Disposal Method:
Dispose of in accordance with all applicable federal, state and local regulations.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
None for normal use.

Ventilation:
Local Exhaust Maintain adequate ventilation.
Mechanical n/d
Special None.
Other n/s

Protective Gloves:
Rubber or neoprene.
Eye Protection:
Chemical safety goggles.
Other Protective Equipment:
Rubber boots, apron.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Do not store in unlined metal containers.

Other Precautions:
None.

Product Warning Label Statement — Section 10

n/s

Shipping Information — Section 11

EPA Hazardous Waste ID Number..
UN/NA ID Number.....
DOT Shipping Name.....
DOT Labels.....
Packaging Requirements

IMCO Class.....
DOT Hazard Class.

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... n/s
Product Codes: n/s n/s
General Comments:

Product CAS No... n/s
n/s n/s

IDN #
039367730

Material Safety Data Sheet Effective: 01/10/85 Section 1

Manufacturer's Name Union Carbide Corporation
Address(Number, Street, City, State, and ZIP Code)
39 Old Biogebury Road Danbury CT 06817-0001
Emergency Phone Information Phone Name of Preparer
1-800-UCC-Help Not stated

Trade Name SAG 10 Silicone Antifoam Emulsion
Chemical Name Antifoam Emulsion
GPUN MSDS No. U052.00 Formula Mixture

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
	Polydimethylsiloxane Emulsion	n/s	n/s	n/s

Other Notes:
n/s = not stated
n/a = not applicable

Physical Data Section 3

Boiling Point C(F)..... 780
Specific Gravity (H2O=1). 1
Percent Volatile..... n/s
By Volume (%)

Vapor Density (Air=1).... >1
pH..... n/s

Melting Point C(F)..... n/s
Vapor Pressure (mm Hg.).. <20
Evaporation Rate..... <1
(Butyl Acetate =1)

Solubility in Water..... Dispers.
Odor Threshhold..... n/s

Appearance and Odor: Milky-white liquid, mild odor.

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
93 F (Closed Cup)

Autoignition Temp.
Not stated

Flammable Limits	Lel	Uel
In Air % by Vol.	Unknown	Unknown

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
n/s	n/s	n/s	n/s

Extinguishing Media
Use water spray, carbon dioxide, alcohol type foam
Special Fire Fighting Procedures
None expected to be required

Unusual Fire and Explosion Hazards
None

Threshhold Limit Value
None established by ACGIH or OSHA

Routes of Exposure
Eyes, skin, inhalation, ingestion

Symptoms of Overexposure
Not stated

Effects or Risks From Exposure
A knowledge of the available toxicity information and of the physicial and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
Ingestion: Harmful effects expected
Skin: Wash with soap and water.
Inhalation: Emergency care anticipated.
Eyes: Flush with water.

Note to Physician
Toxicological studies have shown the material to be of very low toxicity. There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms of the clinical condition.

Reactivity Data — Section 6

Stability: Unstable Stable X
Conditions to Avoid:
Not stated

Incompatability (Materials to avoid):
None

Hazardous Decomposition Products:
Burning can produce carbon monoxide, carbon dioxide, and oxides of silicon.

Hazardous Polymerization: May Occur Will Not Occur X
Conditions to Avoid:
Not stated

Other Comments:
Not stated

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Collect for disposal.

Waste Disposal Method:
Landfill where permitted under appropriate federal, state, and local regulations.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
None required in normal use.

Ventilation:
Local Exhaust Not stated
Mechanical Recommended
Special Not stated
Other Not stated

Protective Gloves:
PVC coated
Eye Protection:
Safety glasses
Other Protective Equipment:
Eye bath and safety shower

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Normal precautions common to manufacturing practice should be followed. WARNING: Hot organic chemical vapors or mists are susceptible to sudden spontaneous combustion when mixed with air. Ignition may occur at temperatures below those published in the literature as 'autoignition' or 'ignition' temperatures. Ignition temperatuers decrease with increasing vapor volume and vapor/air contact time and are influenced by pressure changes. Ignition may occur at typical elevated temperature process conditions, especially in process operating under vacuum if subjected to sudden ingress or air, or outside* **Other Precautions:**
None
*process equipment operating under elevated pressure if sudden escape of vapors or mists to the atmosphere occurs. Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained.

Product Warning Label Statement — Section 10

Not stated

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. n/s
UN/NA ID Number..... n/s
DOT Shipping Name..... n/s
DOT Labels..... n/s
Packaging Requirements
n/s
IMCO Class..... n/s
DOT Hazard Class. n/s

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... n/s
Product Codes: n/s n/s
Product CAS No... n/s
n/s n/s
General Comments:
Product use location is unknown.

Material Safety Data Sheet Effective: 04/17/91 Section 1

Manufacturer's Name Union Carbide Corporation
Address(Number, Street, City, State, and ZIP Code)
Old Ridgebury Road, Danbury, CT 06817
Emergency Phone Information Phone Name of Preparer
304/744-3487 Not Stated Not Stated

Trade Name Union Carbide SAG 2001 Silicone Antifoam Emulsion
Chemical Name Polydimethylsiloxane Emulsion
GPUN MSDS No. U006.00 Formula Mixture

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
67762-90-7	Polydimethylsiloxane Emulsion + Addit	<50	n/e	n/e
7732-18-5	Water	>50	n/e	n/e

Other Notes:
n/s = not stated
n/e = not established
n/d = not determined; n/a = not applicable

Physical Data Section 3

Boiling Point C(F)..... >100C
Specific Gravity (H2O=1). .966
Percent Volatile..... n/s
By Volume (%)

Vapor Density (Air=1).... >1
pH..... n/s

Melting Point C(F)..... n/s
Vapor Pressure (mm Hg.).. <20
Evaporation Rate..... <1
(Butyl Acetate=1)

Solubility in Water..... Dispersed
Odor Threshold..... n/s

Appearance and Odor: Milky-white liquid, mild odor

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
None (PMCC ASTM D-93)(Aqueous Sys)

Autoignition Temp.
n/s

Flammable Limits	Lel	Uel
% In Air	n/d	n/s

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
0*	1*	0*	n/s

Extinguishing Media
After water evaporates, residue can burn. Use Water Spray, CO2, Alcohol- **
Special Fire Fighting Procedures
None expected to be required.

Unusual Fire and Explosion Hazards
None

**Type or Universal-Type Foams applied by manufacturer's recommended technique
Use CO2 or Dry Chemical for small fires.

Threshhold Limit Value
See Section 2.
None established.

Routes of Exposure
n/s

Symptoms of Overexposure
n/s

Medical Conditions Aggravated: A knowledge of the available toxicology information and of the physical/chemical properties of the material suggests that overexposure is unlikely to aggravated existing medical conditions.

Significant Lab Data with Relevance to Human Health Hazard Evaluations:
None currently known.

Effects or Risks From Exposure
INGESTION, SKIN ABSORPTION, INHALATION, SKIN, EYES: No evidence of adverse effects from available information.

REPEATED OVEREXPOSURE: No evidence of adverse effects from available information.
OTHERS: None currently known.

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
INGESTION: No harmful effects expected.
SKIN: Wash with soap and water.
INHALATION: No emergency care anticipated.
EYES: Flush with water.

Note to Physician
There is no specific antidote. Treatment of overexposure should be directed at the control of symptom s and the clinical condition of the patient.

Section 6

Reactivity Data

Stability: Unstable Stable X

Conditions to Avoid:
None

Incompatability (Materials to avoid):
None

Hazardous Decomposition Products:
Burning can produce CO, CO2, & Oxides of Silicon. CO is highly toxic if inhaled, CO2 in sufficient conc. can act as an asphyxiant. Acute overexposure to *

Hazardous Polymerization: May Occur Will Not Occur X

Conditions to Avoid:
None

Other Comments:
*the products of combustion may result in irritation of respiratory tract.

Section 7

Spill or Leak Procedures

Steps to be taken in case material is released or spilled:
Collect for disposal.

Waste Disposal Method:
Landfill where permitted under appropriate federal, state and local regulations.

Section 8

Special Protection Information

Respiratory Protection (Specify type):
None required in normal use.

Ventilation:
Local Exhaust n/a
Mechanical General room ventilation is expected to be satisfactory.
Special n/a
Other n/a

Protective Gloves:
PVC-Coated
Eye Protection:
Safety glasses
Other Protective Equipment:
Eye bath and safety shower.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Normal precautions common to good manufacturing practice should be followed in handling and storage.

Other Precautions:
None

Product Warning Label Statement — Section 10

n/a

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. n/a
UN/NA ID Number..... n/a
DOT Shipping Name..... n/a
DOT Labels..... n/a
IMCO Class..... n/a
DOT Hazard Class..... n/a
Packaging Requirements
n/a

Comments and Reference Numbers — Section 12

Safety Office File No... n/a
Cross Ref. No... n/a
Product Codes: 2001
General Comments:
Product used at TMI.

Product CAS No... n/a *SEE BELOW n/a n/a

IDN#
043452100
044932800

* PC: 02243
F#: S3281

UNION CARBIDE CHEMICALS AND PLASTICS COMPANY INC.

Specialty Chemicals Division

MATERIAL SAFETY DATA SHEET

U006

EFFECTIVE DATE: 04/17/91

Union Carbide urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: (1) notify its employees, agents, contractors and others whom it knows or believes will use this material of the information in this MSDS and any other information regarding hazards or safety; (2) furnish this same information to each of its customers for the product; and (3) request its customers to notify their employees, customers, and other users of the product of this information.

I. IDENTIFICATION

PRODUCT NAME: UNION CARBIDE SAG 2001 Silicone Antifoam Emulsion

CHEMICAL NAME: Polydimethylsiloxane emulsion

CHEMICAL FAMILY: Organosilicone Emulsion

FORMULA: Mixture

MOLECULAR WEIGHT: Mixture

SYNONYMS: None

CAS # and CAS NAME: Trade Secret / 67762-90-7 / 7732-18-5
Trade Secret / Siloxanes and Silicones, di-Me, reaction products with silica / Water

II. PHYSICAL DATA (Determined on typical material)

BOILING POINT, 760 mm Hg: >100°C (Mixture)

FREEZING POINT: ca. 0°C

SPECIFIC GRAVITY (H2O = 1): 0.988 @ 25/25°C

VAPOR PRESSURE AT 20°C: <20 mm Hg

VAPOR DENSITY (air = 1): >1

SOLUBILITY IN WATER by wt: Dispersible

EVAPORATION RATE (Butyl Acetate = 1): <1

APPEARANCE AND ODOR: Milky-white liquid, mild odor

EMERGENCY PHONE NUMBER: 1-800-UCC-HELP (Number available at all times) or 304-744-3487

UNION CARBIDE CHEMICALS AND PLASTICS COMPANY INC.
Specialty Chemicals Division
39 Old Ridgebury Road, Danbury, CT. 06817-0001

PRODUCT NAME: UNION CARBIDE SAG 2001 Silicone Antifoam Emulsion

III. INGREDIENTS

MATERIAL	%	TLV (Units)	HAZARD
Polydimethylsiloxane emulsion plus proprietary additives	<50	None Established	See Section V
Water	>50	None Established	See Section V

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (test method(s)): None by Pensky-Martens closed cup ASTM D 93 (Aqueous system)

FLAMMABLE LIMITS IN AIR, % by volume: LOWER: Not determined. UPPER: Not determined.

EXTINGUISHING MEDIA: After water evaporates, residue can burn. Use water spray, carbon dioxide, alcohol-type or universal-type foams applied by manufacturer's recommended techniques. Use carbon dioxide or dry chemical for small fires.

SPECIAL FIRE FIGHTING PROCEDURES: None expected to be required.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None.

V. HEALTH HAZARD DATA

EXPOSURE LIMIT(S): None established by ACGIH or OSHA.

EFFECTS OF SINGLE OVEREXPOSURE:

SWALLOWING: No evidence of adverse effects from available information.

SKIN ABSORPTION: No evidence of adverse effects from available information.

INHALATION: No evidence of adverse effects from available information.

SKIN CONTACT: No evidence of adverse effects from available information.

EYE CONTACT: No evidence of adverse effects from available information.

EFFECTS OF REPEATED OVEREXPOSURE: No evidence of adverse effects from available information.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION: None currently known.

PRODUCT NAME: UNION CARBIDE SAG 2001 Silicone Antifoam Emulsion

OTHER EFFECTS OF OVEREXPOSURE:
None currently known.

EMERGENCY AND FIRST AID PROCEDURES:

SWALLOWING: No harmful effects expected.

SKIN: Wash with soap and water.

INHALATION: No emergency care anticipated.

EYES: Flush with water.

NOTES TO PHYSICIAN: There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

VI. REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: None.

INCOMPATIBILITY (materials to avoid):
None.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS:
Burning can produce carbon monoxide, carbon dioxide, and oxides of silicon. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant. Acute overexposure to the products of combustion may result in irritation of the respiratory tract.

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID: None.

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
Collect for disposal.

WASTE DISPOSAL METHOD: Landfill where permitted under appropriate Federal, State, and local regulations.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type):
None required in normal use.

PRODUCT NAME: UNION CARBIDE SAG 2001 Silicone Antifoam Emulsion

VENTILATION: General (mechanical) room ventilation is expected to be satisfactory

PROTECTIVE GLOVES: PVC-coated

EYE PROTECTION: Safety glasses

OTHER PROTECTIVE EQUIPMENT:
Eye bath and safety shower

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
Normal precautions common to good manufacturing practice should be followed in handling and storage.

OTHER PRECAUTIONS: None.

X. REGULATORY INFORMATION

STATUS ON SUBSTANCE LISTS:

The concentrations shown are maximum or ceiling levels (weight %) to be used for calculations for regulations. Trade Secrets are indicated by "T.S".

FEDERAL EPA

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal to or greater than the reportable quantities (RQs) in 40 CFR 302.4.

Components present in this product at a level which could require reporting under the statute are:
**** NONE ****

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312).

Components present in this product at a level which could require reporting under the statute are:
**** NONE ****

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material.

Components present in this product at a level which could require reporting under the statute are:
**** NONE ****

Material Safety Data Sheet Effective: 05/18/89 Section 1

Manufacturer's Name Betz Industrial
Address(Number, Street, City, State, and ZIP Code)
4636 Somerton Road, Trevose, Pa. 19047
Emergency Phone 215/355-3300 Information Phone Not Stated Name of Preparer Not Stated

Trade Name Slimicide C74
Chemical Name Not Stated
GPUN MSDS No. S777.00 Formula Not Stated

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
107-21-1	Ethylene Glycol	n/s	50 ppm	50 ppm
68424-85-1	Alkyl Dimethyl Benzyl Ammonium Chlori	n/s	400 ppm	400 ppm
67-63-0	Isopropyl Alcohol	n/s	400 ppm	400 ppm
13590-97-1	Dodecylguanidine Hydrochloride	n/s	None	None
64-17-5	Ethyl Alcohol (Ethanol)	n/s	1000 ppm	1000 ppm

Other Notes:
n/s = not stated

Physical Data Section 3

Boiling Point C(F)..... n/s
Specific Gravity (H2O=1). 1.022
Percent Volatile..... n/s
By Volume (%)

Vapor Density (Air=1).... >1
pH..... ~5.3

Melting Point C(F)..... n/s
Vapor Pressure (mm Hg.).. 23
Evaporation Rate..... <1
(Ether=1)

Solubility in Water..... 100%
Odor Threshhold..... n/s

Appearance and Odor: Colorless liquid; mild odor.

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
116F SETA(CC)

Autoignition Temp.
n/s

Flammable Limits	Lel	Uel
% In Air	n/s	n/s

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
2	3	0	n/s

Extinguishing Media
Dry Chemical, CO2, Foam or Water.
Special Fire Fighting Procedures
Firefighters should wear positive pressure SCBA (full face-piece type).

Unusual Fire and Explosion Hazards
n/s

Health Hazard Data Section 5(A,B,C)

Threshhold Limit Value
See Section 2.

Routes of Exposure
Skin, Inhalation

Symptoms of Overexposure
Inhalation of vapors/mists/aerosols may cause eye, nose, throat and lung irritation; skin contact may cause severe irritation or burns. May be toxic if orally ingested. Medical Conditions Aggravated: Not known.
Ethylene Glycol: Liver, kidney and blood toxin; CNS depressant; animal teratogen (High oral doses).
Alkyl Dimethyl Benzyl Ammonium Chloride: Corrosive (Eyes).
Isopropyl Alcohol: Flammable liquid; Chronic overexposure may cause liver and kidney toxicity.
Dodecylguanidine Hydrochloride: Corrosive.
Ethyl Alcohol: Flammable; May cause defatting/dermatitis/dizziness/headache.

Effects or Risks From Exposure
ACUTE: SKIN: Corrosive to skin. Potential skin sensitizer.
EYE: Corrosive to the eyes.
INHALATION: Vapors/gases/mists and/or aerosols cause irritation to upper respiratory tract.
CHRONIC: Prolonged/repeated overexposures may cause: Tissue necrosis, blood cell damage or impair blood cell function, reproductive system toxicity, skin sensitization.

Listed as Carcinogen or Potential Carcinogen
NTP Unknown I.A.R.C. Unknown OSHA Unknown

Emergency and First Aid Procedures
SKIN: Remove clothing. Wash area w/large amounts of soap solution or water for 15 minutes. Immediately contact physician.
EYES: Immediately flush eyes with water for 15 minutes. Immediately contact a physician for additional treatment.
INHALATION: Remove victim from contaminated area. Apply necessary first aid treatment. Immediately contact a physician.
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 of milk or water.

Note to Physician
n/s

Reactivity Data — Section 6

Stability: Unstable Stable X

Conditions to Avoid:
n/s

Incompatability (Materials to avoid):
May react with strong oxidizers. Do not contaminated Betz tank clean-out category 'B'.

Hazardous Decomposition Products:
Thermal Decomposition (destructive fires) yields elemental oxides.

Hazardous Polymerization: May Occur Will Not Occur X

Conditions to Avoid:
n/s

Other Comments:
n/s

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Ventilate area, use specified protective equipment. Contain and absorb on absorbent material. Place in waste disposal container. The contaminated absorbent should be considered a pesticide and disposed of in an approved pesticide landfill. See product label storage and disposal instructions. Remove ignition sources. Flush area with water. Spread sand/grit.

Waste Disposal Method:
Water contaminated with this product may be sent to a sanitary sewer treatment facility, IAW any local agreement, a permitted waste treatment facility or discharged under a NPDES permit product (as is)-
Dispose of in approved pesticide facility or according to label instructions.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
Use respirators within use limitations or else use supplied air respirators. If ventilation is inadequate or significant product exposure is likely, use a respirator with organic vapor cartridge & dust/mist prefilter.

Ventilation:
Local Exhaust Adequate ventilation to maintain air contaminants below
Mechanical exposure limits.
Special n/s
Other n/s

Protective Gloves:
Gauntlet-type rubber gloves. c

Eye Protection:
Splash proof chemical goggles, faceshield.

Other Protective Equipment:
Chemical resistant apron. Wash off after each use. Replace as necessary.
Use protective equipment IAW 29CFR Section 1910.132-134.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
STORAGE: Keep drums & pails closed when not in use. Store in cool ventilated location. Store away from oxidizers.
HANDLING: Immediately remove contaminated clothing, wash before reuse combustible. Do not use around sparks or flames. Bond containers during filling or discharge when performed at temperatures at or above the product flash point.

Other Precautions:
n/s

Product Warning Label Statement — Section 10

May be toxic if orally ingested.

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. *
UN/NA ID Number..... UN1760
DOT Shipping Name..... UN1760 Corrosive Liquid, N.O.S.
DOT Labels..... n/s
IMCO Class..... n/s
DOT Hazard Class. Corrosive to Skin **

Packaging Requirements
n/s

*D001=Ignitable; D002=Combustible. **Combustible

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... n/s
Product CAS No... n/s
Product Codes: n/s n/s n/s n/s
General Comments:
Product used at TMI.

IDN# 041555880

Material Safety Data Sheet **Effective:** 07/30/90 Section 1

Manufacturer's Name Betz Laboratories, Inc.
Address(Number, Street, City, State, and ZIP Code)
4636 Somerton Road, Trevose, Pa. 19047

Emergency Phone	**Information Phone**	**Name of Preparer**
215/355-3300	Not Stated	Harold M. Hersh

Trade Name Betz DTS
Chemical Name Detoxifying Agent
GPUN MSDS No. B383.00 **Formula** Not Stated

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
1302-78-9	Sodium Montorillonite	n/s	.1 mg/m3	10 mg/m3
	Tridymite	n/s	.05 mg/m3	5 mg/m3
14464-46-1	Cristobalite	n/s	.05 mg/m3	5 mg/m3

Other Notes:
n/s = not stated; n/e = not established
n/a = not applicable; n/d = not determined

Physical Data Section 3

Boiling Point C(F)..... n/s
Specific Gravity (H2O=1). 1.142
Percent Volatile By Volume (%)..... n/s

Vapor Density (Air=1).... <1
pH..... ~5.9

Melting Point C(F)..... n/s
Vapor Pressure (mm Hg.).. 18
Evaporation Rate (Water=1)..... n/d

Solubility in Water..... 0
Odor Threshhold..... n/s

Appearance and Odor: Green-brown liquid; slight odor.

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
>200° P-M (CC)

Autoignition Temp.
n/s

Flammable Limits	**Lel**	**Uel**
% In Air	n/s	n/s

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
1	1	0	n/s

Extinguishing Media
Dry Chemical, CO2, Foam or Water
Special Fire Fighting Procedures
Firefighters should wear positive pressure SCBA (full face-piece type).

Unusual Fire and Explosion Hazards
n/s

Health Hazard Data **Section 5(A,B,C)**

Threshhold Limit Value
See Section .2

Routes of Exposure
Skin

Symptoms of Overexposure
May cause redness or itching of skin.

Medical Conditions Aggravated
Not Known

Effects or Risks From Exposure
ACUTE:
SKIN: Slightly irritating to skin.
EYE: Moderate irritating to eyes.
RESPIRATORY: Mists/aerosols may cause irritation to upper respiratory tract.
CHRONIC: No evidence of potential chronic effects.

Listed as Carcinogen or Potential Carcinogen
NTP Unknown **I.A.R.C.** Unknown **OSHA** Unknown

Emergency and First Aid Procedures
SKIN: Remove contaminated clothing. Wash exposed area w/large quantity of soap solution or water for 15 minutes.
EYE: Immediately flush eyes with water for 15 minutes. Immediately contact a physician for additional treatment.
INHALATION: Remove victim from contaminated area to fresh air. Apply appropriate first air treatment as necessary.
INGESTION: Do not feed anything by mouth to an unconscious or convulsive victim. Dilute contents of stomach. Induce vomiting by one of the standard methods. Immediately contact a physician.

Note to Physician
n/s

Reactivity Data — Section 6

Stability: Unstable **Stable** X
Conditions to Avoid:
n/s
Betz Tank Clean-Out Category 'B'.
Incompatability (Materials to avoid):
n/s

Hazardous Decomposition Products:
(Destructive Fires) yields elemental oxides.

Hazardous Polymerization: May Occur **Will Not Occur** X
Conditions to Avoid:
n/s

Other Comments:
n/s

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Ventilate area, use specified protective equipment (Sec 8). Contain & absorb on absorbent material. Place in waste disposal container. The waste characteristics of the absorbed material, or any contaminated soil, should be determined IAW RCRA regulations.
Flush area with water. Wet area may be slippery. Spread sand/grit.

Waste Disposal Method:
Water contaminated w/this product may be sent to sanitary sewer treatment facility, IAW any local agreement, a permitted waste treatment facility or discharged under a NPDES Permit Product (as is) - Incinerate or bury in approved landfill.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
Use IAW 29CFR Section 1910.132-134. Use respirators within use limitations or else use supplied air respirators. If ventilation inadequate or significant product exposure is likely, use respiratory w/dust/mist filters.
Ventilation:
Local Exhaust Adequate ventilation to maintain air contaminants below exposure
Mechanical limits.
Special n/s
Other n/s

Protective Gloves:
Rubber gloves. Wash off after each use. Replace as necessary.
Eye Protection:
Splash proof chemical goggles recommended.
Other Protective Equipment:
n/s

Special Precautions — Section 9

Precautions to be taken in handling and storing:
STORAGE: Keep drums & pails closed when not in use. Do not freeze if frozen thaw & mix completely prior to use.
HANDLING: Normal chemical handling.

Other Precautions:
n/s

Product Warning Label Statement — Section 10

n/s

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. n/s
UN/NA ID Number..... n/s
DOT Shipping Name..... n/s
DOT Labels..... n/s
IMCO Class..... n/s
DOT Hazard Class. n/s
Packaging Requirements
n/s

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... n/s
Product CAS No... n/s
Product Codes: n/s n/s n/s n/s
General Comments:
Product used at TMI.

IDN#
043664100

CONTAINER SIZE: 280 gallon tank.

PO#: 0091908

Material Safety Data Sheet Effective: 08/31/88 Section 1

Manufacturer's Name American Colloid Company
Address (Number, Street, City, State, and ZIP Code)
1900 West Shore Dr., Our North Arlington, Arlington Heights, IL 60004
Emergency Phone (312)392-4600 Information Phone (312)392-4600 Name of Preparer Not Stated

Trade Name Acco Floc 350
Chemical Name Bentonite Clay
GPUN MSDS No. A476.01 Formula Not Stated

Hazardous Ingredients Section 2

CAS No.	Chemical Name	%	ACGIH(TLV)	OSHA(PEL)
	Total Nuisance Dust	n/s	10 mg/m3	15 mg/m3
	Respirable Nuisance Dust	n/s	5 mg/m3	5 mg/m3
14808-60-7	Crystalline Quartz	2-6	n/s	n/s
	Total Dust (Quartz)	n/s	n/s	3 mg/m3
	Respirable Crystalline Quartz	<2	.1 mg/m3	1 mg/m3

Other Notes:
n/s = not stated
n/a = not applicable

Physical Data Section 3

Boiling Point C(F)..... n/a
Specific Gravity (H2O=1). 2.5
Percent Volatile..... n/s
By Volume (%)

Vapor Density (Air=1).... n/a
pH..... n/s

Melting Point C(F)..... n/a
Vapor Pressure (mm Hg.).. n/a
Evaporation Rate..... n/a
Butyl Acetate = 1

Solubility in Water..... Negligible
Odor Threshhold..... n/s

Appearance and Odor: Pale grey to buff powder or granules, odorless.

Fire and Explosion Hazard Data Section 4

Flash Point (Method Used)
n/a

Autoignition Temp.
n/s

Flammable Limits	Lel	Uel
% in Air	n/a	n/a

------ NFPA Hazard Classes ------

Fire	Health	Reactivity	Other
0	2*	0	n/s

Extinguishing Media
n/a
Special Fire Fighting Procedures
Inorganic mineral -- non-flammable.

Unusual Fire and Explosion Hazards
n/a

Threshhold Limit Value
See Section 2.

Routes of Exposure
Inhalation.

Symptoms of Overexposure
Excessive inhalation of dust may result in shortness of breath and reduced pulmonary function.

Medical Conditions Aggravated: Individuals with pulmonary and/or respiratory disease including but not limited to asthma and bronchitis should be precluded from exposure to dust.

Effects or Risks From Exposure
May cause delayed respiratory disease if dust inhaled over a prolonged period of time.

Listed as Carcinogen or Potential Carcinogen
NTP No I.A.R.C. Yes OSHA No

Emergency and First Aid Procedures
EYES: Flush with water.
GROSS INHALATION OF DUST: Remove to fresh air; give oxygen or artificial respiration if necessary; get medical attention.

Note to Physician
n/s

Reactivity Data — Section 6

Stability: Unstable Stable X

Conditions to Avoid:
None known.

Incompatability (Materials to avoid):
None known.

Hazardous Decomposition Products:
None known.

Hazardous Polymerization: May Occur Will Not Occur X

Conditions to Avoid:
None known.

Other Comments:
n/a

Spill or Leak Procedures — Section 7

Steps to be taken in case material is released or spilled:
Vacuum if possible to avoid generating airborne dust. Avoid breathing dust. Wear an approved respirator. Avoid adding water, the product will become slippery when wet.

Waste Disposal Method:
Follow federal, state and local regulations for solid waste.

Special Protection Information — Section 8

Respiratory Protection (Specify type):
OSHA Standard 1910.134 or ANSI Z88.2-1980 specification.

Ventilation:
Local Exhaust As Appropriate
Mechanical As Appropriate
Special None
Other None

Protective Gloves:
Not Required
Eye Protection:
Recommended
Other Protective Equipment:
None
Use good housekeeping practices.

Special Precautions — Section 9

Precautions to be taken in handling and storing:
Avoid breathing dust, use NIOSH/MSHA approved respirator where TLV limits for Crystalline Silica may be exceeded.

Other Precautions:
Slippery when wet.

Product Warning Label Statement — Section 10

n/s

Shipping Information — Section 11

EPA Hazardous Waste ID Number.. n/s
UN/NA ID Number..... n/s
DOT Shipping Name..... n/s
DOT Labels..... n/s
Packaging Requirements
n/s

IMCO Class..... n/s
DOT Hazard Class. n/s

Comments and Reference Numbers — Section 12

Safety Office File No... n/s
Cross Ref. No... n/s
Product Codes: n/s n/s

Product CAS No... n/s
n/s n/s

General Comments:
Product use location is unknown.

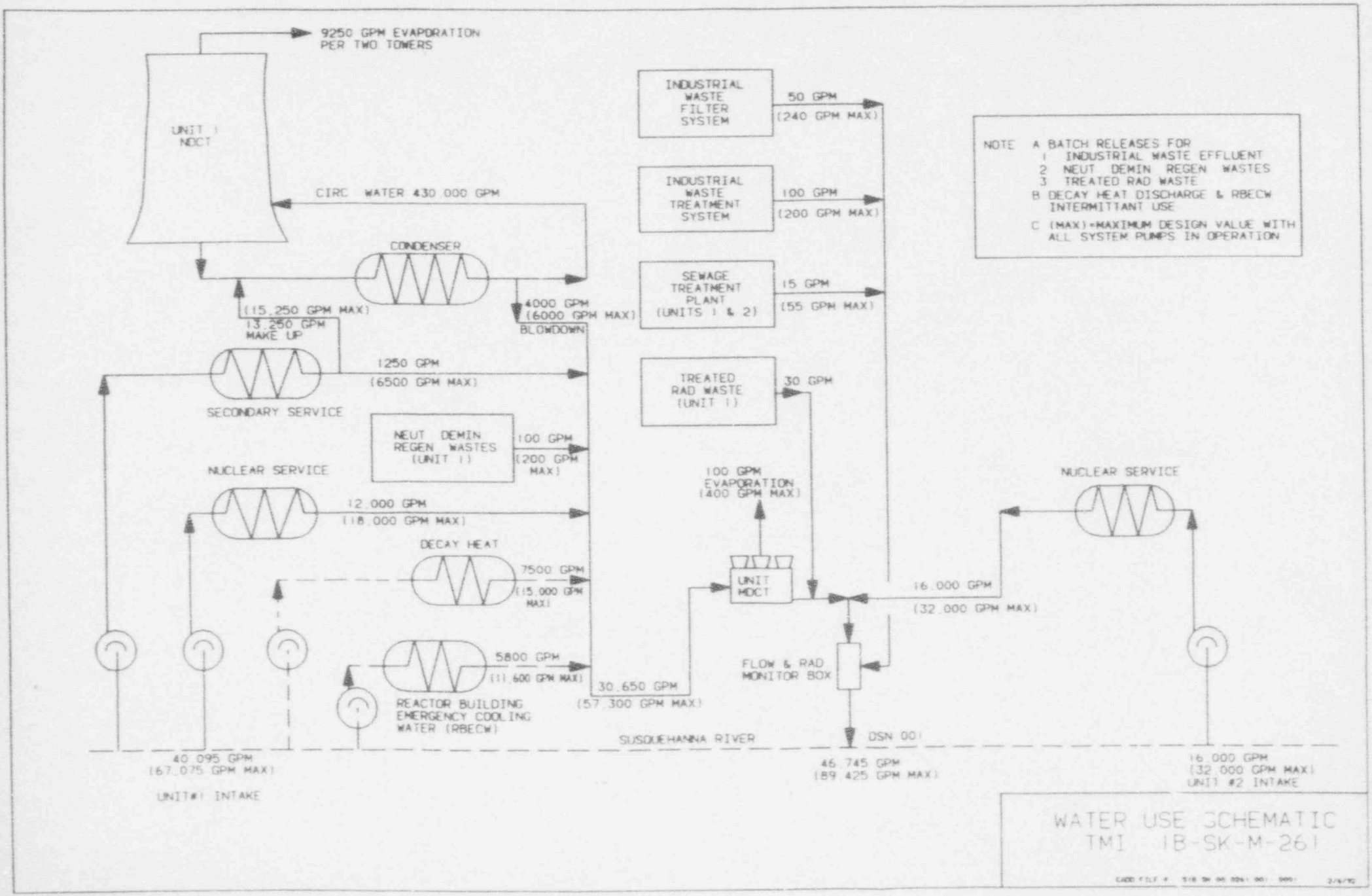
IDN #
017783410
016597310

Attachment 5

NPDES Flowchart Schematic

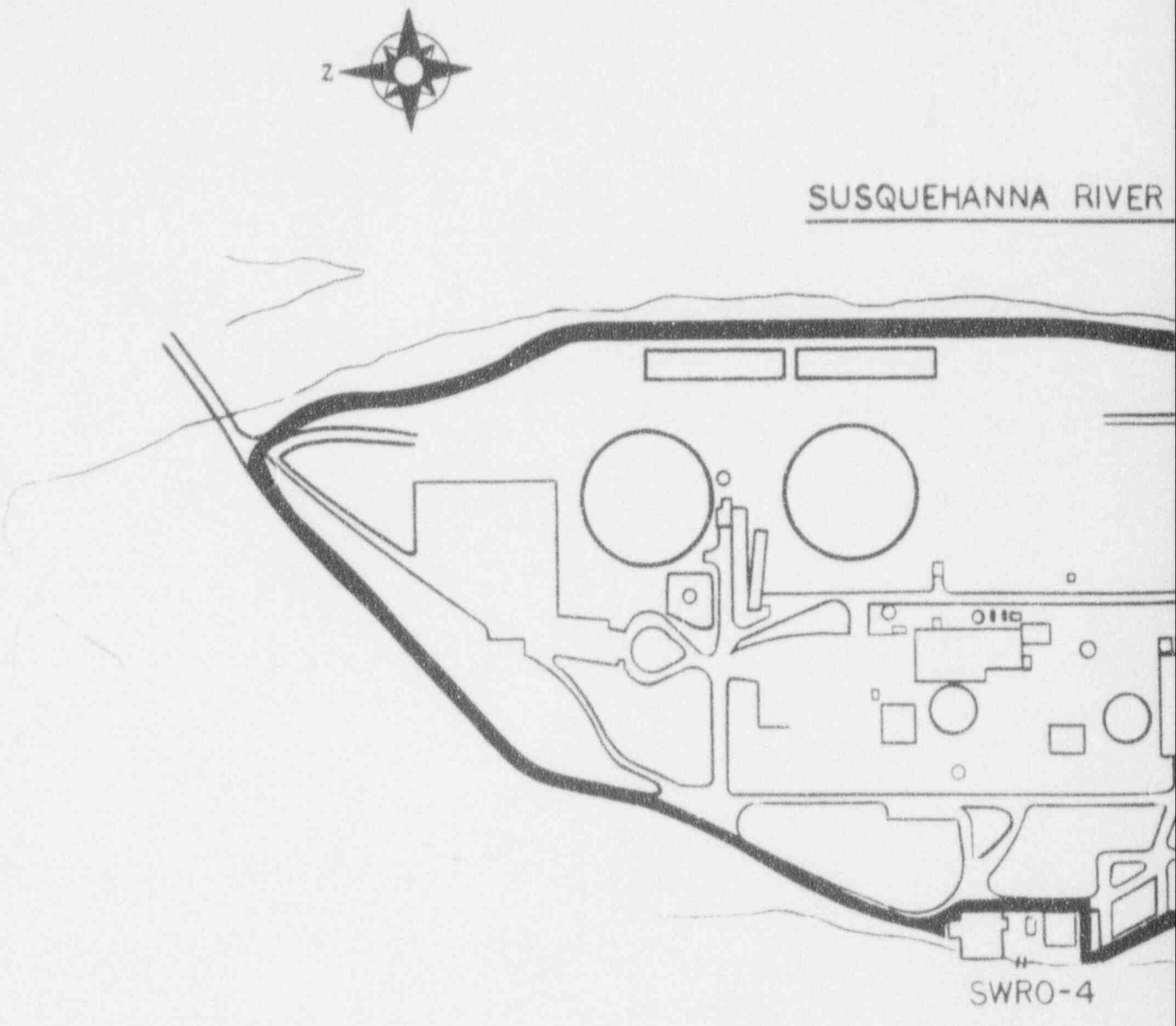
Attachment 6

Water Use and Consumption Schematic


9250 GPM EVAPORATION PER TWO TOWERS
UNIT 1 NDCT
CIRC WATER 430,000 GPM
CONDENSER
(15,250 GPM MAX)
13,250 GPM MAKE UP
4000 GPM (6000 GPM MAX) BLOWDOWN
INDUSTRIAL WASTE FILTER SYSTEM
50 GPM (240 GPM MAX)
INDUSTRIAL WASTE TREATMENT SYSTEM
100 GPM (200 GPM MAX)
SEWAGE TREATMENT PLANT (UNITS 1 & 2)
15 GPM (55 GPM MAX)
TREATED RAD WASTE (UNIT 1)
30 GPM
1250 GPM (6500 GPM MAX)
SECONDARY SERVICE
NEUT DEMIN REGEN WASTES (UNIT 1)
100 GPM (200 GPM MAX)
NUCLEAR SERVICE
12,000 GPM (18,000 GPM MAX)
DECAY HEAT
7500 GPM (15,000 GPM MAX)
5800 GPM (11,600 GPM MAX)
REACTOR BUILDING EMERGENCY COOLING WATER (RBECW)
100 GPM EVAPORATION (400 GPM MAX)
UNIT 1 NDCT
16,000 GPM (32,000 GPM MAX)
FLOW & RAD MONITOR BOX
30,650 GPM (57,300 GPM MAX)
NUCLEAR SERVICE
SUSQUEHANNA RIVER
DSN 001
40,095 GPM (67,075 GPM MAX)
UNIT#1 INTAKE
46,745 GPM (89,425 GPM MAX)
16,000 GPM (32,000 GPM MAX) UNIT #2 INTAKE
NOTE A BATCH RELEASES FOR
1 INDUSTRIAL WASTE EFFLUENT
2 NEUT DEMIN REGEN WASTES
3 TREATED RAD WASTE
B DECAY HEAT DISCHARGE & RBECW INTERMITTANT USE
C (MAX)=MAXIMUM DESIGN VALUE WITH ALL SYSTEM PUMPS IN OPERATION
WATER USE SCHEMATIC
TMI - 1B-SK-M-261

Attachment 7

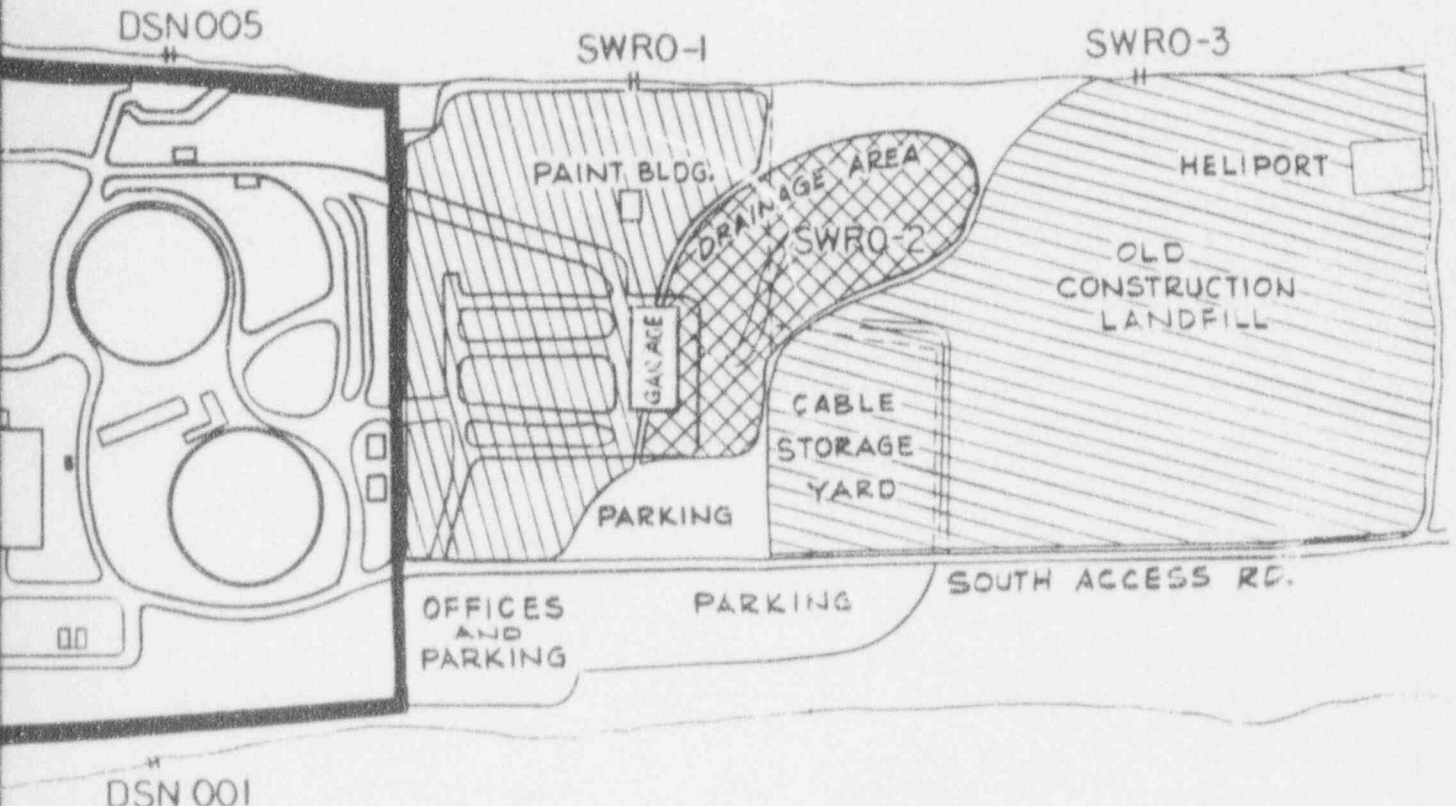
Site Plan and Stormwater Runoff



TYPE I STORMWATER RUNOFF AREA

DESIGNATED OUTFALL	ACREAGE
DSN 005	115.5
SWRO-1	16.5
SWRO-2	11.9
SWRO-3	21.5
SWRO-4	0.7
TOTAL	166.1

(EAST CHANNEL)



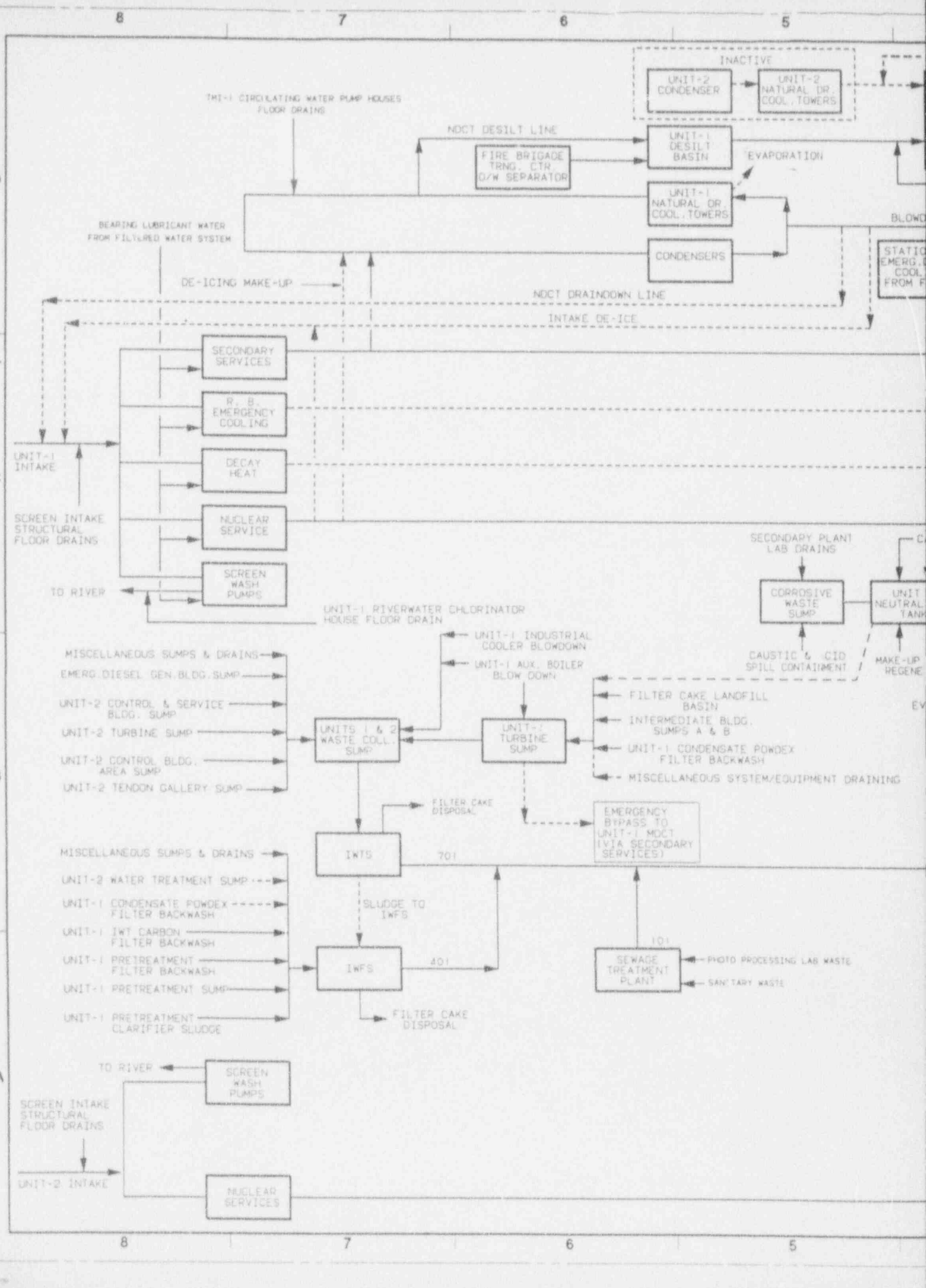
R (MIDDLE CHANNEL)

THREE MILE ISLAND
NUCLEAR STATION

TYPE I

STORMWATER DISCHARGE
POINT SOURCES

9404190289-01


INACTIVE
UNIT-2 CONDENSER
UNIT-2 NATURAL DR. COOL. TOWERS
TMI-1 CIRCULATING WATER PUMP HOUSES FLOOR DRAINS
NDCT DESILT LINE
FIRE BRIGADE TRNG. CTR. O/W SEPARATOR
UNIT-1 DESILT BASIN
EVAPORATION
UNIT-1 NATURAL DR. COOL. TOWERS
BLOWD
BEARING LUBRICANT WATER FROM FILTERED WATER SYSTEM
CONDENSERS
STATIO EMERG. COOL FROM F
DE-ICING MAKE-UP
NDCT DRAINDOWN LINE
INTAKE DE-ICE
SECONDARY SERVICES
R. B. EMERGENCY COOLING
UNIT-1 INTAKE
DECAY HEAT
SCREEN INTAKE STRUCTURAL FLOOR DRAINS
NUCLEAR SERVICE
SECONDARY PLANT LAB DRAINS
SCREEN WASH PUMPS
TO RIVER
CORROSIVE WASTE SUMP
UNIT NEUTRAL TANK
UNIT-1 RIVERWATER CHLORINATOR HOUSE FLOOR DRAIN
CAUSTIC & CID SPILL CONTAINMENT
MAKE-UP REGENE
UNIT-1 INDUSTRIAL COOLER BLOWDOWN
MISCELLANEOUS SUMPS & DRAINS
UNIT-1 AUX. BOILER BLOW DOWN
EMERG. DIESEL GEN. BLDG. SUMP
FILTER CAKE LANDFILL BASIN
UNIT-2 CONTROL & SERVICE BLDG. SUMP
INTERMEDIATE BLDG. SUMPS A & B
UNITS 1 & 2 WASTE COLL. SUMP
UNIT-1 TURBINE SUMP
UNIT-2 TURBINE SUMP
UNIT-1 CONDENSATE POWDEX FILTER BACKWASH
UNIT-2 CONTROL BLDG. AREA SUMP
MISCELLANEOUS SYSTEM/EQUIPMENT DRAINING
UNIT-2 TENDON GALLERY SUMP
FILTER CAKE DISPOSAL
EMERGENCY BYPASS TO UNIT-1 MDCT (VIA SECONDARY SERVICES)
MISCELLANEOUS SUMPS & DRAINS
IWTS
70!
UNIT-2 WATER TREATMENT SUMP
SLUDGE TO IWFS
UNIT-1 CONDENSATE POWDEX FILTER BACKWASH
UNIT-1 IWT CARBON FILTER BACKWASH
10!
UNIT-1 PRETREATMENT FILTER BACKWASH
IWFS
40!
SEWAGE TREATMENT PLANT
PHOTO PROCESSING LAB WASTE
UNIT-1 PRETREATMENT SUMP
SANITARY WASTE
UNIT-1 PRETREATMENT CLARIFIER SLUDGE
FILTER CAKE DISPOSAL
TO RIVER
SCREEN WASH PUMPS
SCREEN INTAKE STRUCTURAL FLOOR DRAINS
UNIT-2 INTAKE
NUCLEAR SERVICES

TMI-2 CIRCULATING WATER PUMP HOUSE FLOOR DRAINS

EAST DAM SETTLING BASIN

005 ID EAST CHANNEL

BASIN DRAIN

YARD DRAIN SYSTEM

004 EMERGENCY DISCHARGE TO EAST CHANNEL

N BLACKOUT DIESEL GEN. NG WATER IRE SYSTEM

AUSTIC

ACID

IZER

501

DEMINERALIZER PATION WASTE

APORATION

UNIT-1 MDCT

TMI-1 LIQUID RADWASTE

003 EMERGENCY DISCHARGE

001 MAIN STATION DISCHARGE

002 EMERGENCY DISCHARGE

DISMANTLED UNIT-2 MDCT

BYPASS

INTAKE STRUCTURES DESILTATION SETTLING BASIN DISCHARGE

AIR INTAKE SUMP DISCHARGE (UNCONTAMINATED RAINWATER)

FIRE SYSTEM WATER

STORM WATER

TMI-2 ADMIN BLDG. COMPUTER ROOM AIR COND. NCCW

DEMINERALIZED WATER STORAGE TANK

DEMINIMUS CONDENSATION FROM PLANT STEAM SYSTEM LEAKAGE

WASTE STORAGE MODULE SUMP DISCHARGE (UNCONTAMINATED RAINWATER)

LEGEND

——— NORMAL FLOW PATTERN

- - - - - - - - INTERMITTANT OR EMERGENCY FLOW PATTERN

CAD FILE: S:\E.SKM.00.0263.000-.0001
THIS IS A COMPUTER GENERATED DWG. DO NOT REVISE IT MANUALLY

9404190289-02

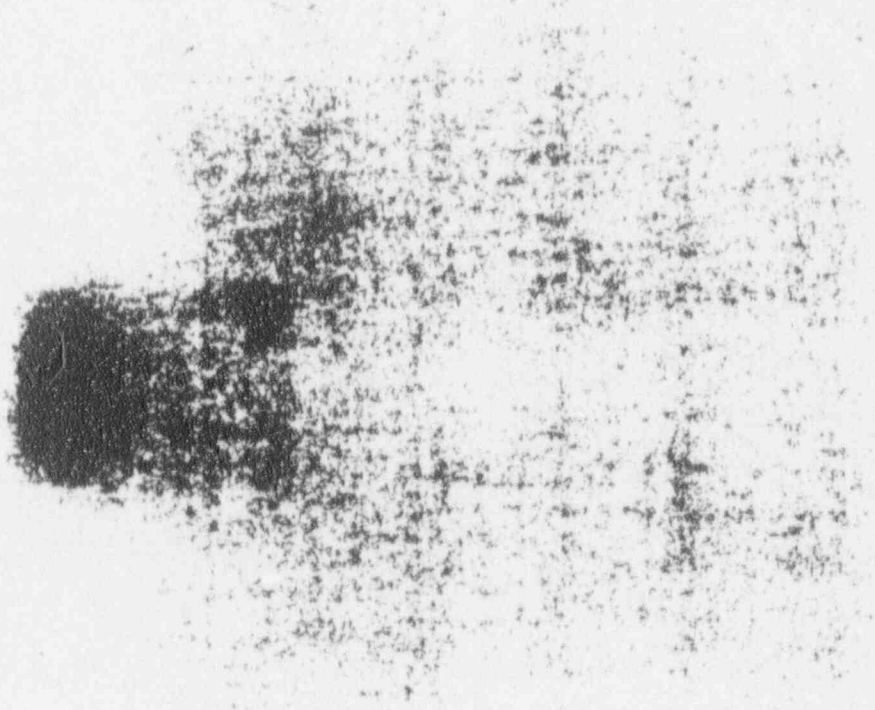
REVISIONS		
REV.	ZONE	DESCRIPTION

E. GOMEZ	02/06/92	GPU Nuclear
DRAWN	DATE	NATIONAL POLLUTANT DISCH ELIMINATION SYSTEM
CHECKED	DATE	FLOW CHART
DESIGN LEADER	DATE	
ENGINEER	DATE	TMI-1 DWG. NO. ID-SK-M-263 SH. 1 OF 1 REV. 4
MANAGER APPROVAL	DATE	SCALE: N/A

NO.	DWG. NO.	TITLE
REFERENCES		

ENG. MOD.	QA	TASK

PROPOSED REVISED WORDING
NPDES PERMIT PA 0009920



ER-BWQ-19.1: Rev. 5/81

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
BUREAU OF WATER QUALITY MANAGEMENT

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
INDUSTRIAL PERMIT NO. PA 0009920

Amendment No. 1

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 et seq. (the "Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 et seq., GPU Nuclear Corporation, Three Mile Island Nuclear Station
P.O. Box 480
Middletown, PA 17055

is authorized to discharge from a facility located in
Three Mile Island Nuclear Station
Londonderry Township, Dauphin County

to the receiving waters named Susquehanna River

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A, B, and C hereof.

This permit and the authorization to discharge shall expire at midnight 9/16/91.

The authority granted by this permit is subject to the following further qualifications:

1. If there is a conflict between the application, its supporting documents and/or amendments and the terms and conditions of this permit, the terms and conditions shall apply.

2. Failure to comply with the terms or conditions of this permit is grounds for enforcement action; for permit termination, revocation and reissuance or modification; or for denial of a permit renewal application.

3. Application for renewal of this permit, or notification of intent to cease discharging by the expiration date, must be submitted to the Department at least 180 days prior to the above expiration date (unless permission has been granted by the Department for submission at a later date), using the appropriate NPDES Permit Application Form. In the event that a timely and complete application for renewal has been submitted and the Department is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit will be automatically continued and will remain fully effective and enforceable pending the grant or denial of the application for permit renewal.

4. This NPDES permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit.

PERMIT ISSUED

DATE 9/16/86
AMENDED AUG 03 [illegible]

BY John B. Oberdick
Leon M. Oberdick
Title Regional Water Quality Manager

CONTROLLED DISTRIBUTION
DOCUMENT SERIAL NUMBER #25

LAT: 40°09'05"
LONG: 76°43'40"

1. Effluent Limitations and Monitoring Requirements, Outfall 001, which receives waste from: Main Station Discharge

   a. The permittee is authorized to discharge during the period from _____ through _____.

   b. Based on the production data and anticipatede wastewater charachteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply:

Discharge Parameter	DISCHARGE LIMITATIONS Mass Units (lbs day) Average Monthly	Maximum Daily	Concentrations (mg/l) Average Monthly	Maximum Daily	Inst. Maximum	Measurement Frequency	Sample Type	24 hr. Report Under A.3.C
Flow (MGD)	Shall be Recorded					Cont.	Meas.	XXX
Delta Temperature	XXX	XXX	XXX	XXX	XXX	Cont.	Recorded	XXX
Suspended Solids	Shall be monitored and reported			XXX	XXX	2/Month	Grab	XXX
Oil and Grease	Shall be monitored and reported			XXX	XXX	2/Month	Grab	XXX
Free Available Chlorine	XXX	XXX	XXX	0.2***	0.5	1/Week	Grab during Chlorination	XXX
Heat Rejection Rate (7/1 to 12/31)	(6) 11,200 x 10 BTU/day as an average monthly					1/Month	Calculated**	XXX
Heat Rejection Rate (1/1 to 6/3)	(6) 22,400 x 10 BTU/day as an average monthly					1/Month	Calculated**	XXX
Hydrazine	XXX	XXX	XXX	0.01****	XXX	****	Grab****	XXX
Betz CT-1	XXX	XXX	XXX	0.2	XXX	1/Shift	Grab during Chem. addition	XXX
Betz C-74	XXX	XXX	XXX	0.2	XXX	1/Week	Grab during Chem. addition	XXX
Total Residual Oxidant *****	XXX	XXX	0.07	0.14	0.17	To Be Determined	Grab	XXX

pH - Not less than 6.0 standard units nor greater than 9.0 standard units at all times.
Monitor and report only 2/month by grab.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations(s):

At Main Discharge - Outfall 001

* Unless otherwise indicated, these are gross discharge limitations.

** See other requirement No. 5 for calculation of Allowable Heat Rejection Rate.

*** See other requirement No. 8.

**** See other requirement No. 14.

***** See other requirement No. 18.

LAT: 40°09'10"
LONG: 76°43'40"

1. Effluent Limitations and Monitoring Requirements, Outfall 101.

a. The permittee is authorized to discharge during the period beginning _____ and lasting through _____.

b. The average monthly flow of effluent discharged from the wastewater treatment facility shall not exceed 0.08 million gallons per day.

c. The quality of effluent shall be limited at all times as specified in Footnote (3) and as follows:

Discharge Parameter	DISCHARGE LIMITATIONS Mass Units (lbs day) Average Monthly	Average Weekly	Maximum Daily	Concentrations (mg/l) Average Monthly	Average Weekly	Maximum Daily	Inst. Maximum	Measurement Frequency	Sample Type	24 hr. Report Under A.3.C
Flow (mgd)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	Cont.	Meas.	XXX
5-day (BOD)	XXX	XXX	XXX	30	XXX	XXX	60	1/mo.	8 hr. comp.	XXX
Total Suspended Solids	XXX	XXX	XXX	30	XXX	XXX	60	1/mo.	8 hr. comp.	XXX
NH3N (5/1 to 10/31)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
NH3N (11/1 to 4/30)	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Phosphorus as P	XXX	XXX	XXX	2	XXX	XXX	4	1/mo.	8 hr. comp.	XXX
D.O. (Minimum)	Minimum of 5 mg/l at all times							Daily	Grab	XXX
Chlorine Residual	Shall be monitored							Daily	Grab	XXX

ph - within Limits of 6.0 to 9.0 Standard Units at All Times. (Daily by Grab)

Fecal Coliform - Oct. 1 thru April 30 - 100,000/100 ml maximum - 1/month by grab
May 1 thru Sept. 30 - See Footnote (2) - 1/month by grab

Footnotes: 1. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): At discharge from treatment facility.

(DSN 101 CONTINUED)

2. Effective disinfection to control disease producing organisms during the swimming season (May 1 through September 30) shall be the production of an effluent which will contain a concentration not greater than 200/100 ml of fecal coliform organisms as a geometric average value, nor greater than 1,000/100 ml of these organisms in more than 10% of the samples tested.

3. In no case shall the arithmetic means of the effluent values of the biochemical oxygen demand (five days) and suspended solids discharged during a period of 30 consecutive days exceed 15 percent of respective arithmetic means of the influent values for those parameters during the same time period, except as specifically authorized by the permitting authority.

LAT: 40°09'05"
LONG: 76°43'40"

1. Effluent Limitations and Monitoring Requirements, Outfall 401, which receives waste from: Industrial Waste Filter System Discharge

a. The permittee is authorized to discharge during the period from _____ through _____.

b. Based on the production data and anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply:

	DISCHARGE LIMITATIONS *					MONITORING REQUIREMENTS		
	Mass Units (lbs/day)		Concentrations (mg/l)					24 hr.. Report
Discharge Parameter	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Inst. Maximum	Measurement Frequency	Sample Type	Under A.3.C.
Flow (MGD)			Shall be reported			2/mo. **	Meas.	XXX
Suspended Solids	XXX	XXX	30	100	XXX	2/mo. **	Grab	XXX
Oil and Grease	XXX	XXX	15	20	30	2/mo. **	Grab	XXX

pH - Not less than 6.0 standard units nor greater than 9.0 standard units at all times. 2/month by grab

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

Point of discharge of Industrial Waste Filter System

*Unless otherwise indicated, these are gross discharge limitations.

**During months with less than two discharges, the required measurement frequency will be equivalent to the number of discharges.

LAT: 40°09'05"
LONG: 76°43'40"

1. Effluent Limitations and Monitoring Requirements, Outfall 501, which receives waste from: Unit 1 Secondary Neutralization Tank Discharge

   a. The permittee is authorized to discharge during the period from _____ through _____.

   b. Based on the production data and anticipatede wastewater charachteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply:

Discharge Parameter	DISCHARGE LIMITATIONS Mass Units (lbs day) Average Monthly	Maximum Daily	Concentrations (mg/l) Average Monthly	Maximum Daily	Inst. Maximum	Measurement Frequency	Sample Type	24 hr. Report Under A.3.C
Flow (MGD)			Shall be reported			2/mo.**	Meas.	XXX
Suspended Solids	XXX	XXX	30	100	XXX	2/mo.**	Grab	XXX
Oil and Grease	XXX	XXX	15	20	30	2/mo.**	Grab	XXX
	NOTE:	During periods when the Secondary Neutralizer Tank						
		Effluent is being processed through the Industrial						
		Waste Treatment System (DSN 701) these monitoring						
		requirements are not applicable.						

pH Not less than 6.0 standard units nor greater than 9.0 standard units at all times.
Monitor and report only 2/month by grab.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations(s):

Unit 1 Secondary Neutralizer Tank Discharges are batch releases. Tank mixed and sampled prior to release via DSN 501.

* Unless otherwise indicated, these are gross discharge limitations.
** During monts with less than two discharges, the required measurement frequency will be equivalent to the number of batch discharges.

LAT: 40°09'05"
LONG: 76°43'40"

1. Effluent Limitations and Monitoring Requirements, Outfall 101, which receives waste from: Industrial Waste Treatment System

   a. The permittee is authorized to discharge during the period from _____ through _____.

   b. Based on the production data and anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply:

	DISCHARGE LIMITATIONS *					MONITORING REQUIREMENTS		
	Mass Units (lbs/day)		Concentrations (mg/l)					24 hr. Report
Discharge Parameter	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Inst. Maximum	Measurement Frequency	Sample Type	Under N.P.C.
Flow (MGD)			Shall be reported			2/mo. **	Meas.	XXX
Suspended Solids	XXX	XXX	30	100	XXX	2/mo. **	Grab	XXX
Oil and Grease	XXX	XXX	15	20	30	2/mo. **	Grab	XXX

pH - Not less than 6.0 standard units nor greater than 9.0 standard units at all times. 2/month by grab

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

Point of discharge of Industrial Waste Treatment System

*Unless otherwise indicated, these are gross discharge limitations.

**During months with less than two discharges, the required measurement frequency will be equivalent to the number of discharges.

LAT: 40°09'05"
LONG: 76°43'40"

1. Effluent Limitations and Monitoring Requirements, Outfall 002, which receives waste from: Emergency Discharge from Unit 2 Mechanical Draft Cooling Tower (MDCT) in event Outfall 001 becomes blocked or discharged related to maintenance activiites.

   a. The permittee is authorized to discharge during the period from _____ through _____.

   b. Based on the production data and anticipatede wastewater charachteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply:

Discharge Parameter	DISCHARGE LIMITATIONS Mass Units (lbs day) Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Inst. Maximum	Measurement Frequency	Sample Type	24 hr. Report Under A.3.C
Flow (MGD)	Shall be recorded					Daily when Discharging	Estimated	XXX
Temperature	XXX	XXX	XXX	XXX	XXX	3 day (1/shift) when discharging	"i-s"	XXX
Suspended Solids	Shall be monitored and reported			XXX	XXX	2/month	Grab	XXX
Oil and Grease	Shall be monitored and reported			XXX	XXX	2/month	Grab	XXX
Free Available Chlorine	XXX	XXX	XXX	***0.2	0.5	1/week	Grab during Chlorination	XXX
Heat Rejection Rate (7/1 to 12/31)	(6) 11, 200 x 10 BTU/day as an average monthly					N/A	Calculated**	XXX
Heat Rejection Rate (1/1 to 6/30)	(6) 22,400 x 10 BTU/day as an average monthly					N/A	Calculated**	XXX

pH Not less than 6.0 standard units nor greater than 9.0 standard units at all times. 2/month by grab.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations(s):

At Main Discharge - Outfall 002

* Unless otherwise indicated, these are gross discharge limitations.

** See Part C for Calculation of Allowable Heat Rejection Rate.

*** See Other Requirement No. 8.

LAT: 40°09'05"
LONG: 76°43'40"

1. Effluent Limitations and Monitoring Requirements, Outfall 003, which receives waste from: Emergency Discharge from Unit 1 Mechanical Draft Cooling Tower (MDCT) in event Outfall 001 becomes blocked or discharged related to maintenance activiites.

   a. The permittee is authorized to discharge during the period from _____ through _____.

   b. Based on the production data and anticipatede wastewater charachteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply:

Discharge Parameter	DISCHARGE LIMITATIONS Mass Uni,s (lbs day) Average Monthly	Maximum Daily	Concentrations (mg/l) Average Monthly	Maximum Daily	Inst. Maximum	Measurement Frequency	Sample Type	24 hr. Report Under A.3.C
Flow (MGD)	Shall be recorded					Daily when Discharging	Estimated	XXX
Temperature	XXX	XXX	XXX	XXX	XXX	3 day (1/shift) when discharging "i-s"		XXX
Suspended Solids	Shall be monitored and reported			XXX	XXX	2/month	Grab	XXX
Oil and Grease	Shall be monitored and reported			XXX	XXX	2/month	Grab	XXX
Free Available Chlroine	XXX	XXX	XXX	0.2***	0.5	1/week	Grab during Chlorination	XXX
Heat Rejection Rate (7/1 to 12/31)	(6) 11, 200 x 10 BTU/day as an average monthly					N/A	Calculated**	XXX
Heat Rejection Rate (1/1 to 6/30)	(6) 22,400 x 10 BTU/day as an a erage monthly					N/A	Calculated**	XXX
Hydrazine	XXX	XXX	XXX	0.01****	XXX	****	Grab****	XXX
Betz CT-1	XXX	XXX	XXX	0.2	XXX	1/Shift	Grab during Chem. Addtion	XXX
Betz C-74	XXX	XXX	XXX	0.2	XXX	1/Week	Grab during	XXX
Total Residual Oxidant	XXX	XXX	0.07	0.14	0.17	To be Determined	Grab	XXX

pH - Not less than 6.0 standard units nor greater than 9.0 standard units at all times.
Monitor and report only 2/month by grab.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations:

At Main Discharge - Outfall 003

* Unless otherwise indicated these are gross discharge limitations

** See other requirement No. 5 for Calculation of Allowable Heat Rejection Rate.

*** See other requirement No. 8

**** See other requirement No. 14

***** See other requirement No. 18

LAT: 40°09'05"
LONG: 76°43'40"

1. Effluent Limitations and Monitoring Requirements, Outfall 004, which receives waste from: Emergency discharge from Unit 1 should the Unit 1 MDCT becomed blocked or discharge related to maintenance activities.

   a. The permittee is authorized to discharge during the period from _____ through _____.

   b. Based on the production data and anticipatede wastewater charachteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply:

	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS		
	Mass Units (lbs/day)		Concentration (mg/l)					24 hr. Report Under A.3.C
Discharge Parameter	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Inst. Maximum	Measurement Frequency	Sample Type	
	Same as Outfall 003 except for thermal limitations do not apply							

pH - Not less than N/A standard units nor greater than N/A standard units at al times.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations:

Point of discharge from Outfall 004

* Unless otherwise indicated these are gross discharge limitations

LAT: 40°09'05"
LONG: 76°43'40"

1. Effluent Limitations and Monitoring Requirements, Outfall 005, which receives waste from: Stormwater, yard drainage, dewatering of natural draft cooling towers, maintenance dredging of desiltation dewatering basin, fire brigade training facility runoff, fire service water runoff, air intake structure sumps, TMI-2 Administration Building Air Conditioning cooling water, demineralized water storage tank, east dam settling basin dewatering, deminimus condensation from plant steam system leakage, and waste module sump discharge.

   a. The permittee is authorized to discharge during the period from _____ through _____.

   b. Based on the production data and anticipatede wastewater charachteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations apply only during periods of dewatering of the natural draft cooling towers or maintenance dredging activities related to the Intake Structure or East Dike Settling Basin, otherwise monitoring is required according to the frequency indicated when discharge is occurring.

	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS		
	Mass Units (lbs/day)		Concentration (mg/l)					
Discharge Parameter	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Inst. Maximum	Measurement Frequency	Sample Type	24 hr. Report Under A.3.C
Flow (MGD)	Shall be estimated when discharging					1/mo.	Estimated	XXX
Suspended Solids	XXX	XXX	30	100	XXX	**	Grab	XXX
Oil and Grease	XXX	XXX	15	20	30	**	Grab	XXX
	** At least one discharge per month must be sampled for TSS and Oil and grease.							
	Approximately two hours following collection of one set of samples a second							
	set of TSS and oil and grease samples shall be collected.							

pH - Not less than 6.0 standard units nor greater than 9.0 standard units at all times. pH limits apply during MDCT dewatering activities and maintenance dredging related to the Intake Structure or East Dike Settling Basin. For all other DSN 005 discharges, monitor by grab sample 2/month when discharging.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations:

Point of discharge from Outfall 005

* Unless otherwise indicated these are gross discharge limitations

2. Definitions

a. The term "bypass" for industrial wastewater means the intentional diversion of wastes from any portion of a treatment facility.

b. The term "severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

c. The "average monthly" mass discharge means the total discharge by weight during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required by this permit, the average monthly mass discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar month when the measurements were made.

d. The "maximum daily" mass discharge means the total discharge by weight during any calendar day.

e. The "average monthly" concentration means the arithmetic average of all the daily determinations of concentration made during a calendar month.

f. The "daily determination of concentration" means either the concentration of a composite sample taken during a calendar day or the arithmetic average of all grab samples taken during a calendar day.

g. The "maximum daily" concentration means the daily determination of concentration for any calendar day.

h. The "instantaneous maximum" concentration means the concentration not to be exceeded at any time in any grab sample.

i. The term "Composite Sample" means a combination of individual samples obtained at regular intervals over a time period. Either the volume of each individual sample is proportional to discharge flow rates, or the sampling interval (for constant volume samples) is proportional to the flow rates over the time period used to produce the composite. The maximum time period between individual samples shall not exceed two hours, except that for wastes of a uniform nature the samples may be collected on a frequency of at least twice per working shift and shall be equally-spaced over a 24-hour period (or over the operating day if flows are of a shorter duration).

j. The term "Grab Sample" means an individual sample collected in less than 15 minutes.

k. The term "i-s" means immersion stabilization - in which a calibrated device is immersed in the effluent stream until the reading is stabilized.

l. The "average monthly" temperature means the arithmetic mean of temperature measurement made on an hourly basis, or the mean value plot of the record of a continuous automated temperature recording instrument, either during a calendar month or during the operating month if flows are of a shorter duration.

m. The "maximum daily" temperature means the highest arithmetic mean of the hourly temperatures observed for any two (2) consecutive hours during a 24hour day, or during the operating day if flows are of a shorter duration.

n. The term "Measured Flow" means any method of liquid volume measurement, the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.

o. The term "At outfall XXX" means a sampling location in outfall line XXX downstream from the last print at which wastes are added to outfall line XXX, or otherwise specified.

p. The term "Estimate" means to be based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

q. The term "non-contact cooling water" shall mean water which is used in a cooling system designed so as to maintain constant separation of the cooling medium from all contact with process chemicals but which may on occasion, as a result of corrosion, cooling system leakage or similar cooling system failures contain small amounts of process chemicals: provided, that all reasonable measures have been taken to prevent, reduce, eliminate and control to the maximum extent feasible such contamination: and provided further, that all reasonable measures have been taken that will mitigate the effects of such contaminations once it has occurred.

r. The term "bypass" for sewage waste means the discharge of partially treated or untreated sewage from anydevice or structure of sewerage facilities due to a power failure, equipment failure, hydraulic overload, and/or blockage in all or any part of the sewerage facilities. This is to distinguish it from an overflow which is the systematic discharge of a mixture of partially treated or untreated sewage and stormwater from any device or structure of combined sewage facilities which is in excess of the downstream hydraulic carrying capacity of those facilities.

s. The "average monthly flow" means the arithmetic mean of daily flow measurements taken during a calendar month.

t. The "average weekly" mass discharge means the total discharge by weight during a calendar week divided by the number of days in the week that the facility was operating. Where less than daily sampling is required by this permit, the (average) weekly mass discharge shall be determined by the summation of all the measured daily discharges by weight divided by the number of days during the calendar week when the measurements were made.

u. The "average weekly" effluent concentration means the arithmetic average of all the daily determinations of concentration made during a calendar week.

3. SELF-MONITORING;, REPORTING, AND RECORDS KEEPING

a. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

b. Reporting of Monitoring Results

(1) Monitoring results obtained during each month shall be summarized for that month, reported on a Discharge Monitoring Report (DMR) Form, and submitted no later than the 28th day of the following month. Duplicate signed copies of these and all other reports required herein, shall be submitted to the Department and the EPA Regional Office at the following addresses:

Dept. of Environmental Resources
Harrisburg Region
One Ararat Boulevard
Harrisburg, PA 17110

Pennsylvania Section 3WM52
Permit Water Branch
Water Division
U. S. Environmental
Protection Agency
Region III
6th and Walnut Streets
Philadelphia, PA 19106

(2) If the permittee monitors any pollutant, using analytical methods described in A.3.e. below, more frequently that the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR.

c. Non-Compliance Reporting

(1) 24-Hour Reporting - The permittee shall orally report to the Department within 24-hours of becoming aware of the following:

(a) Actual or anticipated non-compliance with any term or condition of this permit which may endanger health or the environment.

(b) Actual or anticipated non-compliance with any "maximum daily" discharge limitation which is identified in Part A.1 of this permit as being either:

(i) A toxic pollutant effluent standard established by EPA pursuant to Section 307(a) of the Clean Water Act,

(ii) For a toxic or hazardous pollutant which, if not adequately treated, could constitute a threat to human health, welfare, or the environment, or

(iii) Any pollutant identified as the method to control a toxic pollutant or hazardous substance (i.e. indicator pollutant).

(c) Any unanticipated bypass which exceeds any effluent limitations in the permit.

(d) Where the permittee orally reports this information within the above mentioned 24-hour time period, a written submission outlining the above information must be submitted to the Department within 5-days of becoming aware of such a condition, unless this requirement is waived by the Department upon receipt of the oral report.

(2) Other Non-Compliance Reporting

(a) The permittee shall give advance notice to the Department of any planned changes to the permitted activity or facility which may result in non-compliance with permit monitoring requirements or effluent limitations.

(b) Where the permittee knows in advance of the need for a by-pass which will exceed effluent limitations, it shall submit prior notice to the Department at least 10 days, if possible, before the date of the bypass.

(c) The permittee shall report all instances of non-compliance which are not reported above at the time of DMR submission.

(3) The reports and notifications required above shall contain the following information:

(a) A description of the discharge and cause of non-compliance;

(b) The period of non-compliance, including exact dates and times and/or the anticipated time when the discharge will return to compliance: and

(c) Steps being taken to reduce, eliminate, and prevent recurrence of the non-complying discharge.

d. Specific Toxic Substance Notification Levels - The permittee shall notify the Department as soon as it knows or has reason to believe the following:

(1) That any activity has occurred, or will occur, which would result in the discharge of any Clean Water Act Section 307(A) toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels".

(a) One hundred micrograms per liter

(b) Two hundred micrograms per liter to acrolein and acrylonitrile

(c) Five hundred micrograms per liter for 2, 4-dinitrophenol and 2-methyl - 4, 6-dinitrophenol

(d) One milligram per liter for antimony

(e) Five (5) times the maximum concentration value reported for that pollutant in the permit application

(f) Any other notification level established by the Department

(2) That it has begun, or expects to begin, to use or manufacture as an intermediate or final product to byproduct any toxic pollutant which was not reported in the permit application.

e. Test Procedures

Unless otherwise specified in this permit, the test procedures for the analysis of pollutants shall be those contained in 40 CFR Part 136, or alternate test procedures approved pursuant to that part.

f. Recording of Results

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

(1) The exact place, date, and time of sampling or measurements;

(2) The person(s) who performed the sampling or measurements;

(3) The dates the analyses were performed;

(4) The person(s) who performed the analyses;

(5) The analytical techniques or methods used; and

(6) The results of such analyses

g. Records Retention

All records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for three (3) years. The three year period shall be extended as requested by the Department or the EPA Regional Administrator.

PART A

4. SCHEDULE OF COMPLIANCE

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

b. Periodic Reports Required

No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit to the Department a written notice of compliance or non-compliance with the specific schedule requirement. In the case of non-compliance, the notice shall include the cause of non-compliance, any remedial actions taken, the estimated date when compliance with the elapsed date shall occur, and the probability of meeting the next scheduled requirement.

PART B

1. MANAGEMENT REQUIREMENTS

a. Permit Modification, Termination, or Revocation and Reissuance

(1) This permit may be modified, terminated, or revoked and reissued during its term for any of the causes specified in 25 Pa. Code, Chapter 92.

(2) The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated non-compliance, does not stay any permit condition.

(3) Toxic Pollutants

Notwithstanding the above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge, and such standard or prohibition is more stringent than any limitation for such pollutant in this permit then this permit shall be modified or revoked and reissued by the Department to conform with the toxic effluent standard or prohibition and the permittee so notified.

In the absence of a Departmental action to modify or to revoke and reissue this permit, any toxic effluent standard or prohibition established under Section 307(a) of the Act is considered to be effective and enforceable against the permittee.

b. Duty to Provide Information

(1) The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit.

(2) The permittee shall furnish to the Department, upon request, copies of records required to be kept by this permit.

(3) Other Information - Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information to the Department.

(4) The permittee shall give advance notice to the Department of any planned physical alterations or additions to the permitted treatment facility which may impact effluent quality.

PART B

c. Facilities Operation

The permittee shall at all times maintain in good working order and properly operate all facilities and systems (and related appurtenances) for collection and treatment which are installed or used by the permittee for water pollution control and abatement to achieve compliance with the terms and conditions of the permit. Proper operation and maintenance includes but is not limited to effective performance based on designed facility removals, adequate funding, effective management, adequate operator staffing and training, and adequate laboratory and processing controls including appropriate quality assurance procedures. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with this permit.

d. Adverse Impact

The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from non-compliance with this permit.

e. Bypassing

(1) Bypassing not Exceeding Permit Limitations - The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if the bypass is for essential maintenance to assure efficient operation of the treatment works. This type of bypassing is not subject to the reporting and notification requirements of Part A.3.c above.

(2) Other Bypassing - In all other situations bypassing is prohibited unless the following conditions are met:

(a) A bypass is unavoidable to prevent loss of life, personal injury or "severe property damage";

(b) There are no feasible alternatives to a bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down-time. (This condition is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance); and

(c) The permittee submitted the necessary reports required under Part A.3.c above.

(3) The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three conditions listed above.

PART B

f. Reduction, Loss or Failure of the Treatment Facilities

Upon reduction, loss or failure of the treatment facilities, in order to maintain compliance with its permit, the permittee shall control production and all discharges until either the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost or fails.

g. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from adversely affecting the environment.

2. RESPONSIBILITIES

a. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania's Clean Streams Law and 25 Pa. Code, Chapter 92, the permittee shall allow the head of the Department, the EPA Regional Administrator, and/or their authorized representatives, upon the presentation of credentials and other documents as may be required by law:

(1) To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and

(2) At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit to inspect any monitoring equipment or monitoring method required in this permit; to inspect any collection, treatment, pollution management, or discharge facilities required under the permit; and to sample any substances or parameters at any location.

b. Transfer of Ownership or Control

(1) No permit may be transferred unless approved by the Department.

(2) In the event of any pending charge in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the Department by letter of such pending change at least 30 days prior to the change in ownership or control.

(3) The letter shall be accompanied by the appropriate Department forms for transfer of the permit and a written agreement between the existing permittee and the new owner or controller stating that the existing permittee shall be liable for violations of the permit up to and until the date of permit transfer and that the new owner or controller shall be liable for permit violations from that date on.

(4) After receipt of the documentation above, the Department shall notify the existing permittee and the new owner or controller of its decision concerning approval of the transfer. In approving a transfer the Department may modify or revoke and reissue the permit.

(5) In the event the Department does not approve transfer of the permit, the new owner or controller must submit a new permit application.

c. Confidentiality of Reports

Except for the data determined to be confidential under 25 Pa. Code, Chapter 92 all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department and the EPA Regional Administrator. Effluent data shall not be considered confidential.

d. Penalties and Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for non-compliance pursuant to Section 309 of the Clean Water Act or Section 602 or 605 of the Clean Streams Law.

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

e. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges; nor does it authorize any injury to private property or any invasion of personal rights.

PART B

f. Other Laws

Nothing herein contained shall be construed to be intent on the part of the Department to approve any act made or to be made by the permittee inconsistent with the permittee's lawful powers or with existing laws of the Commonwealth regulating industrial wastes and the practice of professional engineering, nor shall this permit be construed to sanction any act otherwise forbidden by federal or state law or regulation, or by local ordinance. Nor does it pre-empt any duty to obtain state or local assent required by law for the discharge(s).

g. Severability

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

PART C

OTHER REQUIREMENTS

1. Waterborne releases of radioactive materials to unrestricted areas shall conform to criteria set forth in Title 10 Code of Federal Regulations Part 50 Appendix I - Numerical Guides for Design Objectives and Limiting Conditions for Operation to meet the Criterion 'As low as is reasonably achievable' for radioactive material in light-water-cooled nuclear reactor effluents, as implemented through the Environmental Technical Specifications for the facility.

   The facility operator shall provide the Department with copies of reports specifying the quantities of radioactive materials released to unrestricted areas in liquid/gaseous effluent.

   The facility operator shall provide the Department with copies of reports of the results of environmental surveillance activities an dother such reports as necessary for the estimation of the dose consequential to facility operation.

   The above reports are to be forwarded to the following address:

   Pennsylvania Department of Environmental Resources
   Bureau of Radiation Protection
   P.O- Box 2063
   Harrisburg, PA 17120

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

3. The discharge may not change the temperature of the receiving stream by more than 2°F in any one hour.

4. The permittee shall perform the following calculation to demonstrate compliance:

   $Q_d \times 8.34 (T_d - T_1)$ = actual heat discharge rate in 10^6 BTU/day where:

   Q_d = Waste discharge flow in mgd as a monthly average

   T_d = Waste discharge temperature in °F

   T_1 = Plant intake water temperature in °F

   $T_d - T_1$ = Monthly average station temperature difference between plant intake water and plant main station discharge water

PART C

OTHER REQUIREMENTS

5. Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than 2 hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Department that the units in a particular location cannot operate at or below this level of chlorination. **In accordance with 40 CFR 423, "USEPA Steam Electric Guidelines," this condition applies only to recirculating water system cooling tower blowdown.**

6. The discharge of the chemical metal cleaning wastes without the written approval of the Department is prohibited.

7. The controlled rate of **Unit 2** batch discharges of wastewater containing total boron shall be approved by the Department in a letter amendment prior to discharge.

8. The term maximum daily concentration as it relates to chlorine discharge means the average analyses made over a single period of chlorine release which does not exceed two hours.

9. The term "Total Residual Chlorine" or (total residual oxidants for intake water with bromides) means the value obtained using the amperometric method for total residual chlorine described in 40 CFR Part 136.

10. The term "Free Available Chlorine" shall mean the value obtained using the amperometric titration method for free available chlorine described in "Standard Methods for the Examination of Water and Wastewater", Page 112, 13th Edition.

11. The permittee shall notify the Department of Environmental Resources within two (2) working days after discharging from Outfalls 002, 003, and 004 stating the composition of the discharge and the reason for discharging. **The permittee shall make advance notification to the PaDER for discharges resulting from plant maintenance activities.**

12. The **bulk** discharge of corrosion inhibitors, biocides and/or dispersants without the prior written approval of the Department is prohibited. **This condition applies to chemicals used for plant water/wastewater.**

13. The discharge limitations and monitoring requirements contained in this NPDES permit supersede those specified in **previous NPDES permit PA 0009920 and PA 0081648 and their amendments.**

PART C

OTHER REQUIREMENTS

14. Hydrazine shall be monitored once per week at DSN 001 by grab sample during discharges related to Once Through Steam Generator draining following plant outage lay-up conditions. The discharge limitation shall be 0.01 ppm using test procedure ASTM-D1305-78.

15. No stormwater from pavements, area ways, roofs, foundation drains or other sources shall be admitted to the sanitary sewers associated with the herein approved discharge.

16. If, in the opinion of the Department, these works are not so operated or if by reason of change in the character of wastes or increased load upon the works, or changed use or condition of the receiving body of water, or otherwise, the said effluent ceases to be satisfactory or the sewerage facilities shall have created public nuisance, then upon notice by the Department the right herein granted to discharge such effluent shall cease and become null and void unless within the time specified by the Department, the permittee shall adopt such remedial measures as will produce an effluent which, in the opinion of the Department, will be satisfactorily for discharge into the said receiving body of water.

17. Any maximum daily or instantaneous maximum effluent limitation which is exceeded at any internal monitoring point (i.e., DSN 101, DSN 401, DSN 501, or DSN 701) shall not be subject to noncompliance reporting provided that (1) the discharge meets the internal maximum daily or instantaneous maximum discharge limitation within 24 hours and (2) the resulting DSN 001 discharge will not endanger the environment or human health. During the 24 hour period when any internal maximum daily or instantaneous maximum limitation is exceeded, monitoring shall be conducted shiftly (i.e., 3 times per 24 hour period) at DSN 001 for the appropriate discharge parameter.

18. The addition of brominated biocides shall be limited to a period of time not to exceed two (2) hours in any one day. TRO monitoring shall be conducted at the discharge of the TMI-1 Mechanical Draft Cooling Tower (MDCT). Monitoring at the MDCT excludes the impact of chlorine use at the STP.