WPDES permit application for the Crandon Project : scope ID 93C049. 1998

Foth & Van Dyke and Associates, Inc.
Green Bay, Wisconsin: Foth & Van Dyke and Associates, Inc., 1998

Nicolet Minerals COMPANY

Rhinelander Office: 7 N. Brown Street, 3rd Floor • Rhinelander, WI 54501-3161 • Ph: 715.365.1450 • Fax: 715.365.1457
Crandon Office: 104 W. Madison Street, P.O. Box 336 • Crandon, WI 54520-0336 • Ph: 715.478.3393 • Fax: 715.478.3641
Web Site: www.crandonmine.com

December 7, 1998

Mr. Paul Luebke
Wisconsin Department of Natural Resources
Bureau of Wastewater Management
P.O. Box 7921
Madison, WI 53707-7921

Ms. Char Hauger
U.S. Army Corps of Engineers
St. Paul District
190 Fifth Street East
St. Paul, MN 55101-1638

Dear Mr. Luebke and Ms. Hauger:

Re: Crandon Project - *WPDES Permit Application*

Nicolet Minerals Company (NMC) is pleased to submit the attached updated application for a WPDES Discharge Permit for its Crandon Project. The updated application has been prepared pursuant to Chapter 283 Wis. Stats., and is submitted in conjunction with two additional documents relating to surface water management. The first is a report titled *Preliminary Engineering Report for Wastewater Treatment Facilities for the Crandon Project.* The second is a *Notice of Intent for Storm Water Discharge Associated with Construction Activities.* Those documents have been prepared pursuant to Chapters NR 108 and 216, Wis. Admin. Code, respectively.

The permit application includes the following documents:

- Application Form 3400-150 — Application for Reissuance of a Wisconsin Pollutant Discharge Elimination System (WPDES) INDUSTRIAL Wastewater Discharge Permit
- Attachment 1 and Figures 1 through 7 provide additional information.

The updated WPDES Permit Application has been prepared on behalf of NMC by Foth & Van Dyke and Associates Inc. As noted on the attached distribution list, NMC has distributed the document to appropriate state and federal agencies, to local officials, and to various interested parties. It is our understanding that the Wisconsin Department of Natural Resources (WDNR) and the U.S. Army Corps of Engineers (USCOE) will be responsible for distribution of the document to their appropriate staff members.

Form 3400-150 was completed at the request of Mr. Paul Luebke of the WDNR. Since Form 3400-150 is used for reissuance of an existing discharge permit, many items on the form do not precisely relate to new discharge permit requests. Clarifications pertaining to this issue have been made to this application in the form of notes included in Attachment 1.

The primary treated wastewater discharge point, outfall 007, will be a soil absorption system located approximately 2 miles northeast of the plant site. Treated wastewater will also be used for mitigation of soft water bodies, as needed. Section II of this application has been duplicated for each of these outfalls as follows:

- Outfall No. 007, Groundwater discharge via a soil absorption system.
- Outfall No. 015, Skunk Lake mitigation.
- Outfall No. 016, Little Sand Lake mitigation.
- Outfall No. 017, Duck Lake mitigation.

The Skunk Lake, Little Sand Lake, and Duck Lake outfalls are based on the projected potential need for mitigation for these water bodies. Actual mitigation requirements will be determined in accordance with the procedures outlined in the *Crandon Project Surface Water Mitigation Plan.* Outfalls 001 through 005 and 008 through 014 relate to the discharge of non-contact stormwater runoff. The project does not include an outfall 006. These outfalls are discussed in detail in the project's *Preliminary Engineering Report for Wastewater Treatment Facilities* and the *Notice of Intent for Storm Water Discharges Associated with Construction Activities* referenced above.

Mitigation water may also be needed for Hoffman Springs, Hoffman Creek, and Creek 19-14. These water bodies receive a significant portion of their flow from groundwater. As a result, they have hard water characteristics. To provide a high quality mitigation water, NMC is proposing to supply groundwater, with similar hard water characteristics, for mitigation. The groundwater will be obtained from a well located north of Swamp Creek, outside of the area of influence from the mine. This water will not be used for any purpose other than mitigation and will not have any chemicals added to it. As such, this water will not contain pollutants as defined in Chapter NR 200.02(8), Wis. Admin. Code, which states,

> 'Pollutant' means any dredged spoil, solid waste, incinerator residue, sewage, garbage, refuse, oil, sewage sludge, munitions, chemical wastes, biological materials, radioactive substance, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal and agricultural waste discharged into water.

Based on Chapter NR 200.03, Wis. Admin. Code, which is repeated below, NMC does not believe that a WPDES discharge permit is applicable to the use of groundwater for mitigation purposes.

> **NR 200.03 Applicability and exclusions. (1)** An application for a discharge permit shall be filed by any person who discharges or intends to discharge any pollutant from a point source to the waters of the state, or who land applies or disposes of sludge as specified in ch. NR 204, unless the discharge is excluded under sub. (3).

Given the above, the attached permit application does not contain references to the mitigation water additions to Hoffman Spring, Hoffman Creek, or Creek 19-14.

With respect to Chapter NR 207, Wis. Admin. Code, "Water Quality Antidegradation," NMC makes the following statements.

1. As provided in NR 207.05(3), NMC waives the procedures in NR 207.05(2)(a) to (d). The Crandon Project will accommodate important economic and social development through the increase in employment and other factors enumerated under NR 207.04(1)(c). Estimations of this impact are available in Section 4.2.13 of the Crandon Project's *Environmental Impact Report* (EIR).

2. The proposed discharge cannot be altered through the use of additional conservation or recycling measures beyond those already employed. The discharge will consist of treated mine drainage water, contact runoff and excess mill process water as allowed by NR 270.104. Every effort has been made to limit the area impacted by this project and thus limit the amount of contact runoff generated from the site. See Section 4 of the EIR for further discussion of this issue.

3. The wastewater treatment facilities described in the *Preliminary Engineering Report for Wastewater Treatment Facilities* provide the technology needed to meet groundwater standards and water quality based effluent limits. This technology has been evaluated through bench scale tests which are also discussed in the *Preliminary Engineering Report*. Alternate technologies were considered as part of the evaluation of the wastewater treatment processes, but were ruled out for

various reasons. A discussion of the alternatives considered is included in the *Preliminary Engineering Report.*

4. Alternate primary discharge locations, including surface water bodies, have been considered. A discussion of these alternate locations is included in the *Preliminary Engineering Report.*

The discharge flow rate from the project's wastewater treatment system will vary over the life of the mine. While the maximum projected discharge rate is 636 gallons per minute, the average and minimum discharge rates are approximately 375 and 67 gallons per minute, respectively. These rates are impacted by the expected variations in mine inflow.

NMC is requesting that this application be reviewed as expeditiously as possible so that permitting activities associated with the project can continue in a timely manner. If you or your staff have any questions regarding the application, please contact me at (715) 478-3393.

Sincerely,

Gordon Reid
Manager of Engineering
Nicolet Minerals Company

GR:lmc

Distribution

No. of Copies	Sent To
4	Mr. Bill Tans Wisconsin Department of Natural Resources Bureau of Integrated Science Services 101 South Webster Street Madison, WI 53707
3	Ms. Char Hauger U.S. Army Corps of Engineers St. Paul District 190 Fifth Street East St. Paul, MN 55101
6	Mr. Archie Wilson Wisconsin Department of Natural Resources 107 Sutcliff Avenue Rhinelander, WI 54501
2	Mr. Paul Luebke Wisconsin Department of Natural Resources Bureau of Watershed Management 101 South Webster Street, 2nd Floor Madison, WI 53707
3	Mr. Larry Lynch Wisconsin Department of Natural Resources Bureau of Waste Management 101 South Webster Street, 3rd Floor Madison, WI 53707
1	Mr. Christopher Carlson Wisconsin Department of Natural Resources Bureau of Waste Management 101 South Webster Street, 3rd Floor Madison, WI 53707
1	Dr. John Barko U.S. Army Corps of Engineers Waterways Experiment Station CEWES-EP-L 3909 Halls Falls Ferry Road Vicksburg, MS 39180-6199

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1	U.S. Department of the Interior Fish and Wildlife Service Ms. Janet M. Smith, Field Supervisor Green Bay Field Office 1015 Challenger Court Green Bay, WI 54311-8331
1	U.S. Department of the Interior Bureau of Indian Affairs Mr. Robert Jaeger Branch of Natural Resources 615 West Main Street Ashland, WI 54806-0273
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1	Wisconsin Geological & Natural History Survey Mr. Tom Evans 3817 Mineral Point Road, Room 108 Madison, WI 53705

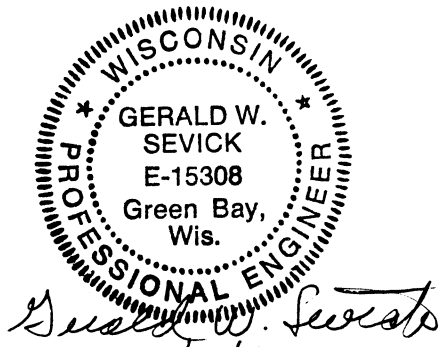
WPDES Permit Application for the Crandon Project

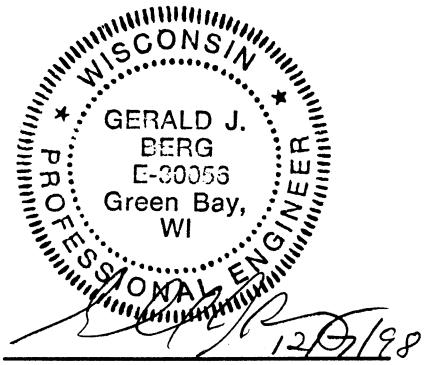
Scope ID: 93C049

Prepared for
Nicolet Minerals Company
7 North Brown Street, 3rd Floor
Rhinelander, Wisconsin 54501-3161

Prepared by
Foth & Van Dyke and Associates Inc.

Originally Issued September 1995
Updated December 1998





Foth & Van Dyke 1998
2737 S. Ridge Road, P.O. Box 19012, Green Bay, Wisconsin 54304, 920/497-2500, FAX: 920/497-8516

WPDES Permit Application
Nicolet Minerals Company
Crandon Project

Contents

Section I

Application for Reissuance of a Wisconsin Pollutant
Discharge Elimination System (WPDES)
INDUSTRIAL Wastewater Discharge Permit
Form 3400-150 Rev. 7-98

WPDES Permit Number	Permit Expiration Date
WI- 0049247-1	NA
FID #	Date Received (leave blank - DNR use only)
NA	

Completion of this application is required pursuant to ss. 283.37 and 283.53, Stats., and ch. NR 200, Wis. Adm. Code. Failure to provide the requested information may result in fines, forfeitures or other penalties pursuant to ss. 283.89 and 283.91, Stats. Personally identifiable information is not likely to be used by the Department for any purpose other than the reasons stated in the form or for the purpose the form is being submitted.

You must complete and return this application at least 180 days prior to the expiration of your current permit. Your application will not be considered complete unless you answer every question on this form. If an item does not apply to you, enter "**NA**" (for "not applicable") to show that you considered the question. The Department may request additional information which is not already specifically requested in this application.

Please type or print the requested information. Do not feel constrained by the space available for answers. If insufficient space is available to address any item, you may continue your answers on an attached sheet of paper, properly noting the item you are addressing. If you are unsure of how to answer a question, refer to the attached instructions. Mail the completed application to the following address:

Department of Natural Resources
101 South Webster Street
P.O. Box 7921
Madison, WI 53707-7921

I. GENERAL INFORMATION

A. FACILITY INFORMATION

1. Facility Name Nicolet Minerals Company

2. Facility Mailing Address

P.O. Box NA

Street Address or Route 7 North Brown Street, 3rd Floor

City or Village, State and Zip Code Rhinelander, Wisconsin 54501-3161

3. Facility Location Address **(See Attachment 1)**

☐ Same as Facility Mailing Address (continue to 4)
☐ Other (specify below)

Street Address or Route _____

City or Village, State and Zip Code _____

County _____

Other _____

I. GENERAL INFORMATION (continued)

A. FACILITY INFORMATION

4. Facility Contact Person

Name Gordon Reid

Title Manager of Engineering

Telephone Numbers (_7_1_5_) _4_ _7_ _8_ - _3_ _3_ _9_ _3_, FAX (_7_ _1_ _5_) _4_ _7_ _8_ - _3_ _6_ _4_ _1_

Mailing Address

☑ Same as Facility Mailing Address (continue to 5)

☐ Other (specify below)

P.O. Box, Street Address or Route _____

City or Village, State and Zip Code _____

5. Wastewater Treatment System Operator-in-charge **(See Attachment 1)**

Operator's Name NA

Operator's Certification No., Grade and Subclasses NA

☐ This facility does not employ a wastewater treatment system operator-in-charge.

6. Native American Lands - Is any portion of the facility located on Native American lands? ☐ Yes ☑ No

7. Other WPDES Permits - Are any of the facility's current process wastewater discharges, including noncontact cooling water and storm water, covered under a general WPDES permit?

☑ No

☐ Yes If yes, specify below.

Permit No	Discharge Description
WI-__ __ __ __ __ __ __ - __	
WI-__ __ __ __ __ __ __ - __	
WI- -	

B. OWNER OR RESPONSIBLE PARTY INFORMATION

1. Owner or Responsible Party (parent company or organization with direct control over the facility)

☑ Same as Facility Information (continue to Section C)

☐ Other (specify) _____

2. Mailing Address of Owner or Responsible Party

P.O. Box, Number and Street or Route _____

City, State and Zip Code _____

3. Owner or Responsible Party Contact Person

Name _____

Title _____

Telephone Number ( ) -

4. Owner or Responsible Party's Identity - Are you the: ☐ Owner, ☐ Operator of the Facility, or ☐ Both

I. GENERAL INFORMATION (continued)

C. CORRESPONDENCE ADDRESSES

1. WPDES Correspondence - Correspondence regarding the reissued WPDES permit should be directed to:

☑ Facility Mailing Address, ☐ Facility Location Address, or ☐ Owner or Responsible Party Mailing Address

Send to the Attention of: Gordon Reid, Manager of Engineering

2. DMR Address - Discharge Monitoring Report Forms (DMRs) and/or Turn Around Documents (TADs) should be directed to:

☑ Facility Mailing Address, ☐ Facility Location Address, or ☐ Owner or Responsible Party Mailing Address

Send to the Attention of: Gordon Reid, Manager of Engineering

C. CONTRACT ANALYSIS INFORMATION

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

☐ No
☑ Yes. If yes, provide the following information:

Laboratory Name and WI Certification No.	Address	Telephone Number
EnChem Inc.	525 Science Drive	(888) 536-2436
WI Lab ID: 113172950	Madison, WI 53711	
Battelle Marine Sciences Laboratory	1529 West Sequim Bay Road	(360)681-3604
WI Lab ID: 998087420	Sequim, Washington 98382	
Commercial Testing & Engineering Co	4665 Paris Street, Suite B200	(303)373-4772
WI Lab ID: NA	Denver, Colorado 80239	
		(___)____-_____
		(___)____-_____
		(___)____-_____

D. SITE MAP

Attach to this application a detailed topographic site map, such as a USGS topographic map, showing the area extending to at least one mile beyond property boundaries. This map must show an outline of the facility and any wastewater treatment systems, all receiving waters (e.g., to rivers, lakes streams, etc.) and all land treatment sites (e.g., spray irrigation systems, ridge and furrow systems, etc.). For surface water discharges, show all outfalls including storm water outfalls, estimate the distance from the facility to the receiving waters and indicate whether discharges are direct or via a storm sewer or other conveyance. Also indicate the location of any surface water intake structures. For land treatment sites, show all groundwater monitoring wells, nearby residences and potable wells within 1,000 feet of the sites. Number all outfalls and sampling points. Include the map scale and a meridian arrow showing north.
(See Attachment 1)

Section II

I. GENERAL INFORMATION (continued)

WI - 0049247-1

Page 4

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL

A. DESCRIPTION OF INDUSTRIAL ACTIVITY

1. Nature of Business (provide a brief description)

Nicolet Minerals Company (NMC) proposes to develop an underground zinc/copper mine, an above-ground mill for the beneficiation of the ore, and ancillary facilities to support the mine and mill. The production rate will be approximately 5,500 tons/day of ore. See the project's Mine Permit Application for more details.

2. Change in Operations

a. Since the issuance of your current WPDES permit, have any changes in the operations of the facility or modifications of the facility's wastewater treatment system affected either the quantity or quality of the discharges from the facility?

NA ☐ No ☐ Yes If yes, attach a brief summary of the changes and modifications.

b. In the next five years, do you intend to expand or change the operations of the facility or modify the facility's wastewater treatment system to an extent that the quantity or quality of the discharge will be affected?

NA ☐ No ☐ Yes If yes, attach a brief summary of the planned changes.

Planned wastewater treatment system operation:

3. Days of Operation 24 Hours per Day, 7 Days per Week, and 12 Months per Year

4. Number of Employees Normal 402, and Maximum 526

5. Sanitary Wastewater - Where are sanitary wastewaters (from lavatories, rest rooms, etc.) discharged?

☐ In a septic tank system and/or subsurface absorption system

☑ In a privately owned treatment system owned by you or others. Identify others: _____

☐ In a publicly owned treatment system operated by _____

☐ Other (specify) _____

6. Water Supply - What are the facility's sources of water?

	Name of Source	Average Volume or Flow Rate (include units)
Municipal Supply		
Surface Water Intake		
Private Well	Potable Water Well	20 gpm
Other (specify)	Mine Groundwater Infiltration	452 gpm
Other (specify)	Site Runoff	161 gpm (See Attachment 1)

7. Flow Diagram - Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. Reference Figure 3, Overall Mill Water Balance, Average Conditions

8. Alternative Phosphorus Effluent Limitation - If you wish to request an alternative effluent limitation for phosphorus or would like the alternative phosphorus effluent limitation in the current permit to be included in the reissued permit, you must demonstrate that a 1 mg/L total phosphorus effluent standard is not achievable and provide information that is necessary for the Department to establish an alternative limit. The demonstration and alternative limit information must be submitted with this application even though you may already have an alternative limit in your current permit. NA

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

Complete this section for ***each*** surface water outfall excluding those that discharge only storm water. Make copies of this blank section if necessary.

B. SURFACE WATER OUTFALL LOCATION, WASTEWATER SOURCES AND TREATMENT TECHNOLOGIES

1. Receiving Water Groundwater via a soil absorption system

2. Outfall Location

   a. Latitude and Longitude (to nearest 15 seconds)

   45 Deg. 30 Min. 45 Sec. Latitude 88 Deg. 53 Min. 30 Sec. Longitude

   b. Description (for example, east bank of Wisconsin River one-quarter mile down stream of Second Street bridge)

   The north side of Keith Siding Road (see Figure 4) approximately 2 miles west of County Trunk M

3. Wetlands - Does this outfall discharge to a wetland?

   ☑ No
   ☐ Yes If yes, are you requesting increased (less restrictive) effluent limitations for this outfall or will the discharge from this outfall increase over the next five years?

   ☐ No
   ☐ Yes If yes, you may be required to submit a wetland evaluation with this application. See the instructions for more information.

4. Seasonal or Intermittent Discharges

   ☑ Discharge is not seasonal or intermittent.
   ☐ Discharge is seasonal (specify) From: _____ Through: _____

   From: _____ Through: _____

   ☐ Discharge is intermittent (attach a description of the frequency, duration and flow rate of each discharge occurrence, except for storm water runoff and spillage or leaks)

5. Type of Wastewater (check all that apply to this outfall)

	Average Flow (specify units)
☐ Noncontact Cooling	
☐ Contact Cooling	
☐ Sanitary Wastewater	
☐ Process Wastewater	
☐ Storm Water	
☐ Boiler Blowdown	
☐ Cooling Tower Blowdown	
☑ Treated Mine and Mill Wastewater	0.54 MGD
☐	

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

B. SURFACE WATER OUTFALL LOCATION, WASTEWATER SOURCES AND TREATMENT TECHNOLOGIES

6. Discharge Flow Rates Over Term of Current Permit (specify gallons per day (gpd) or million gallons per day (MGD))

	Flow (specify units)	Time Period
Maximum Day	0.916 MGD	24 hrs/day
Maximum 7-day Average	0.916 MGD	24 hrs/day
Maximum 30-day Average	0.916 MGD	24 hrs/day
Maximum Annual Average	0.916 MGD	24 hrs/day

7. Process Streams Contributing To the Outfall Discharge - Identify and provide the Standard Industrial Classification (SIC) code for each production process that contributes wastewaters to this outfall discharge. If a technology-based effluent standard is applicable to the process wastewater, provide the production rate for the process.

Process Name (if applicable) Metal Mining - Copper Ores — Process SIC Code 1 0 2 1

Process Name (if applicable) Metal Mining - Lead and Zinc Ores — Process SIC Code 1 0 3 1

Process Name (if applicable) _____ — Process SIC Code ___ ___ ___ ___

Process Name (if applicable) _____ — Process SIC Code ___ ___ ___ ___

Description and Production Rates

The production process consists of underground mining and milling to produce zinc, copper and lead concentrates during the first 16 years and copper and zinc concentrates during the following 12 years. Production will occur at a rate of about 2,000,000 tons of ore per year. Wastewaters treated prior to discharge will consist of mine drainage water, contact storm water runoff, and excess mill process water. Average wastewater treatment discharge rate is expected to be about 375 gallons per minute (gpm) but may range from a low of 67 gpm to a high of about 636 gpm. See the project's Mine Permit Application for detailed description of the process.

8. Treatment System Description (describe any treatment given to wastewaters prior to discharge from this outfall)

☐ No treatment provided (continue to 11)

(See Attachment 1)

9. Schematic Diagram of Treatment System - Attach to this application a schematic diagram of your wastewater treatment system. Show all bypasses, sample locations and treatment units and processes. (See Figures 6 and 7)

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

B. SURFACE WATER OUTFALL LOCATION, WASTEWATER SOURCES AND TREATMENT TECHNOLOGIES

10. Sludge Disposal - Does your wastewater treatment system produce a sludge?

☐ No
☑ Yes If yes, where do you dispose your wastewater treatment system sludge?

☐ Land Application
☐ Landfill
☐ Haul to or by Other Permitted Facility

Facility Name _____

WPDES Permit No. WI- ___ ___ ___ ___ ___ ___ ___

☑ Other (See Attachment 1)

11. Additives - Provide the number of biocides, water quality conditioners and process additives that you add at any one time to the waters discharged from this outfall. **(See Attachment 1)**

0 Biocides (chlorine and other halogens, fungicides, algalcides, herbicides, bacterial control chemicals, etc.)

7 Water Quality Conditioners (water and wastewater treatment chemicals including scale and corrosion inhibitors, chemical conditioning agents, pH adjustment chemicals, alum, ferric chloride (pickle liquor) polymers, ammonia, phosphorus, defoamers, etc)

0 Process Additives (limited to dyes and surfactants)

0 How many of the biocides are used less frequently than once in any four day period?

0 How many of the water quality conditioners and process additives are used less frequently than once in any four day period?

12. Biological Toxicity Data - In the last five years, have any biological tests for acute or chronic toxicity been made on the discharge from this outfall or on the receiving water in relation to the discharge from this outfall?

☑ No
☐ Yes If yes, provide all test dates and types below and attach to this application test results for those tests not previously submitted to the Department.

Dates	Type or Test

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

Complete this section for ***each*** surface water outfall excluding those that discharge only storm water. Make copies of this blank section if necessary.

B. SURFACE WATER OUTFALL LOCATION, WASTEWATER SOURCES AND TREATMENT TECHNOLOGIES

1. Receiving Water Skunk Lake

2. Outfall Location

   a. Latitude and Longitude (to nearest 15 seconds)

   45 Deg. 29 Min. 00 Sec. Latitude 88 Deg. 54 Min. 30 Sec. Longitude

   b. Description (for example, east bank of Wisconsin River one-quarter mile down stream of Second Street bridge)

   The southwest lobe of Skunk Lake (see Figure 5)

3. Wetlands - Does this outfall discharge to a wetland?

   ☑ No
   ☐ Yes If yes, are you requesting increased (less restrictive) effluent limitations for this outfall or will the discharge from this outfall increase over the next five years?

   ☐ No
   ☐ Yes If yes, you may be required to submit a wetland evaluation with this application. See the instructions for more information.

4. Seasonal or Intermittent Discharges

   ☐ Discharge is not seasonal or intermittent.
   ☐ Discharge is seasonal (specify) From: _____ Through: _____

   From: _____ Through: _____

   ☑ Discharge is intermittent (attach a description of the frequency, duration and flow rate of each discharge occurrence, except for storm water runoff and spillage or leaks) **(See Attachment 1)**

5. Type of Wastewater (check all that apply to this outfall)

	Average Flow (specify units)
☐ Noncontact Cooling	
☐ Contact Cooling	
☐ Sanitary Wastewater	
☐ Process Wastewater	
☐ Storm Water	
☐ Boiler Blowdown	
☐ Cooling Tower Blowdown	
☑ Treated Mine and Mill Wastewater	(See Attachment 1)
☐	

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

B. SURFACE WATER OUTFALL LOCATION, WASTEWATER SOURCES AND TREATMENT TECHNOLOGIES

6. Discharge Flow Rates Over Term of Current Permit (specify gallons per day (gpd) or million gallons per day (MGD))

	Flow (specify units)	Time Period
Maximum Day	(See Attachment 1)	
Maximum 7-day Average		
Maximum 30-day Average		
Maximum Annual Average		

7. Process Streams Contributing To the Outfall Discharge - Identify and provide the Standard Industrial Classification (SIC) code for each production process that contributes wastewaters to this outfall discharge. If a technology-based effluent standard is applicable to the process wastewater, provide the production rate for the process.

Process Name (if applicable) Metal Mining - Copper Ores — Process SIC Code 1 0 2 1

Process Name (if applicable) Metal Mining - Lead and Zinc Ores — Process SIC Code 1 0 3 1

Process Name (if applicable) _____ — Process SIC Code ____ ____ ____ ____

Process Name (if applicable) _____ — Process SIC Code ____ ____ ____ ____

Description and Production Rates

The production process consists of underground mining and milling to produce zinc, copper and lead concentrates during the first 16 years and copper and zinc concentrates during the following 12 years. Production will occur at a rate of about 2,000,000 tons of ore per year. Wastewaters treated prior to discharge will consist of mine drainage water, contact storm water runoff, and excess mill process water. Average wastewater treatment discharge rate is expected to be about 375 gallons per minute (gpm) but may range from a low of 67 gpm to a high of about 636 gpm. See the project's Mine Permit Application for detailed description of the process.

8. Treatment System Description (describe any treatment given to wastewaters prior to discharge from this outfall)

☐ No treatment provided (continue to 11)

(See Attachment 1)

9. Schematic Diagram of Treatment System - Attach to this application a schematic diagram of your wastewater treatment system. Show all bypasses, sample locations and treatment units and processes.

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

B. SURFACE WATER OUTFALL LOCATION, WASTEWATER SOURCES AND TREATMENT TECHNOLOGIES

10. Sludge Disposal - Does your wastewater treatment system produce a sludge?

☐ No
☑ Yes If yes, where do you dispose your wastewater treatment system sludge?

☐ Land Application
☐ Landfill
☐ Haul to or by Other Permitted Facility

Facility Name _____

WPDES Permit No. WI- _ _ _ _ _ _ _

☑ Other (See Attachment 1)

11. Additives - Provide the number of biocides, water quality conditioners and process additives that you add at any one time to the waters discharged from this outfall. **(See Attachment 1)**

0 Biocides (chlorine and other halogens, fungicides, algalcides, herbicides, bacterial control chemicals, etc.)

7 Water Quality Conditioners (water and wastewater treatment chemicals including scale and corrosion inhibitors, chemical conditioning agents, pH adjustment chemicals, alum, ferric chloride (pickle liquor) polymers, ammonia, phosphorus, defoamers, etc)

0 Process Additives (limited to dyes and surfactants)

0 How many of the biocides are used less frequently than once in any four day period?

0 How many of the water quality conditioners and process additives are used less frequently than once in any four day period?

12. Biological Toxicity Data - In the last five years, have any biological tests for acute or chronic toxicity been made on the discharge from this outfall or on the receiving water in relation to the discharge from this outfall?

☑ No
☐ Yes If yes, provide all test dates and types below and attach to this application test results for those tests not previously submitted to the Department.

Dates	Type or Test

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

Complete this section for ***each*** surface water outfall excluding those that discharge only storm water. Make copies of this blank section if necessary.

B. SURFACE WATER OUTFALL LOCATION, WASTEWATER SOURCES AND TREATMENT TECHNOLOGIES

1. Receiving Water Little Sand Lake

2. Outfall Location

a. Latitude and Longitude (to nearest 15 seconds)

45 Deg. 28 Min. 30 Sec. Latitude 88 Deg. 54 Min. 45 Sec. Longitude

b. Description (for example, east bank of Wisconsin River one-quarter mile down stream of Second Street bridge)

The north side of Little Sand Lake approximately 1,000 feet west-northwest of the boat landing (see Figure 5)

3. Wetlands - Does this outfall discharge to a wetland?

☑ No
☐ Yes If yes, are you requesting increased (less restrictive) effluent limitations for this outfall or will the discharge from this outfall increase over the next five years?

☐ No
☐ Yes If yes, you may be required to submit a wetland evaluation with this application. See the instructions for more information.

4. Seasonal or Intermittent Discharges

☐ Discharge is not seasonal or intermittent.
☐ Discharge is seasonal (specify) From: _____ Through: _____

From: _____ Through: _____

☑ Discharge is intermittent (attach a description of the frequency, duration and flow rate of each discharge occurrence, except for storm water runoff and spillage or leaks) **(See Attachment 1)**

5. Type of Wastewater (check all that apply to this outfall)

	Average Flow (specify units)
☐ Noncontact Cooling	
☐ Contact Cooling	
☐ Sanitary Wastewater	
☐ Process Wastewater	
☐ Storm Water	
☐ Boiler Blowdown	
☐ Cooling Tower Blowdown	
☑ Treated Mine and Mill Wastewater	**(See Attachment 1)**
☐	

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

B. SURFACE WATER OUTFALL LOCATION, WASTEWATER SOURCES AND TREATMENT TECHNOLOGIES

6. Discharge Flow Rates Over Term of Current Permit (specify gallons per day (gpd) or million gallons per day (MGD))

	Flow (specify units)	Time Period
Maximum Day	(See Attachment 1)	
Maximum 7-day Average		
Maximum 30-day Average		
Maximum Annual Average		

7. Process Streams Contributing To the Outfall Discharge - Identify and provide the Standard Industrial Classification (SIC) code for each production process that contributes wastewaters to this outfall discharge. If a technology-based effluent standard is applicable to the process wastewater, provide the production rate for the process.

Process Name (if applicable) Metal Mining - Copper Ores — Process SIC Code 1021

Process Name (if applicable) Metal Mining - Lead and Zinc Ores — Process SIC Code 1031

Process Name (if applicable) _____ — Process SIC Code ____

Process Name (if applicable) _____ — Process SIC Code ____

Description and Production Rates

The production process consists of underground mining and milling to produce zinc, copper and lead concentrates during the first 16 years and copper and zinc concentrates during the following 12 years. Production will occur at a rate of about 2,000,000 tons of ore per year. Wastewaters treated prior to discharge will consist of mine drainage water, contact storm water runoff, and excess mill process water. Average wastewater treatment discharge rate is expected to be about 375 gallons per minute (gpm) but may range from a low of 67 gpm to a high of about 636 gpm. See the project's Mine Permit Application for detailed description of the process.

8. Treatment System Description (describe any treatment given to wastewaters prior to discharge from this outfall)

☐ No treatment provided (continue to 11)

(See Attachment 1)

9. Schematic Diagram of Treatment System - Attach to this application a schematic diagram of your wastewater treatment system. Show all bypasses, sample locations and treatment units and processes.

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

B. SURFACE WATER OUTFALL LOCATION, WASTEWATER SOURCES AND TREATMENT TECHNOLOGIES

10. Sludge Disposal - Does your wastewater treatment system produce a sludge?

☐ No
☑ Yes If yes, where do you dispose your wastewater treatment system sludge?

☐ Land Application
☐ Landfill
☐ Haul to or by Other Permitted Facility

Facility Name _____

WPDES Permit No. WI- ___ ___ ___ ___ ___ ___ ___

☑ Other (See Attachment 1)

11. Additives - Provide the number of biocides, water quality conditioners and process additives that you add at any one time to the waters discharged from this outfall. **(See Attachment 1)**

0 Biocides (chlorine and other halogens, fungicides, algalcides, herbicides, bacterial control chemicals, etc.)

7 Water Quality Conditioners (water and wastewater treatment chemicals including scale and corrosion inhibitors, chemical conditioning agents, pH adjustment chemicals, alum, ferric chloride (pickle liquor) polymers, ammonia, phosphorus, defoamers, etc)

0 Process Additives (limited to dyes and surfactants)

0 How many of the biocides are used less frequently than once in any four day period?

0 How many of the water quality conditioners and process additives are used less frequently than once in any four day period?

12. Biological Toxicity Data - In the last five years, have any biological tests for acute or chronic toxicity been made on the discharge from this outfall or on the receiving water in relation to the discharge from this outfall?

☑ No
☐ Yes If yes, provide all test dates and types below and attach to this application test results for those tests not previously submitted to the Department.

Dates	Type or Test

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

Complete this section for ***each*** surface water outfall excluding those that discharge only storm water. Make copies of this blank section if necessary.

B. SURFACE WATER OUTFALL LOCATION, WASTEWATER SOURCES AND TREATMENT TECHNOLOGIES

1. Receiving Water Duck Lake

2. Outfall Location

a. Latitude and Longitude (to nearest 15 seconds)

45 Deg. 28 Min. 15 Sec. Latitude 88 Deg. 54 Min. 00 Sec. Longitude

b. Description (for example, east bank of Wisconsin River one-quarter mile down stream of Second Street bridge)

On the east side of Duck Lake approximately 1,500 feet north of Sand Lake Road and immediately east of the Lincoln/Nashville township line. (see Figure 5)

3. Wetlands - Does this outfall discharge to a wetland?

☑ No
☐ Yes If yes, are you requesting increased (less restrictive) effluent limitations for this outfall or will the discharge from this outfall increase over the next five years?

☐ No
☐ Yes If yes, you may be required to submit a wetland evaluation with this application. See the instructions for more information.

4. Seasonal or Intermittent Discharges

☐ Discharge is not seasonal or intermittent.
☐ Discharge is seasonal (specify) From: _____ Through: _____

From: _____ Through: _____

☑ Discharge is intermittent (attach a description of the frequency, duration and flow rate of each discharge occurrence, except for storm water runoff and spillage or leaks) **(See Attachment 1)**

5. Type of Wastewater (check all that apply to this outfall)

	Average Flow (specify units)
☐ Noncontact Cooling	
☐ Contact Cooling	
☐ Sanitary Wastewater	
☐ Process Wastewater	
☐ Storm Water	
☐ Boiler Blowdown	
☐ Cooling Tower Blowdown	
☑ Treated Mine and Mill Wastewater	(See Attachment 1)
☐	

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

B. SURFACE WATER OUTFALL LOCATION, WASTEWATER SOURCES AND TREATMENT TECHNOLOGIES

6. Discharge Flow Rates Over Term of Current Permit (specify gallons per day (gpd) or million gallons per day (MGD))

	Flow (specify units)	Time Period
Maximum Day	(See Attachment 1)	
Maximum 7-day Average		
Maximum 30-day Average		
Maximum Annual Average		

7. Process Streams Contributing To the Outfall Discharge - Identify and provide the Standard Industrial Classification (SIC) code for each production process that contributes wastewaters to this outfall discharge. If a technology-based effluent standard is applicable to the process wastewater, provide the production rate for the process.

Process Name (if applicable) Metal Mining - Copper Ores — Process SIC Code 1021

Process Name (if applicable) Metal Mining - Lead & Zinc Ores — Process SIC Code 1031

Process Name (if applicable) _____ — Process SIC Code _____

Process Name (if applicable) _____ — Process SIC Code _____

Description and Production Rates

The production process consists of underground mining and milling to produce zinc, copper and lead concentrates during the first 16 years and copper and zinc concentrates during the following 12 years. Production will occur at a rate of about 2,000,000 tons of ore per year. Wastewaters treated prior to discharge will consist of mine drainage water, contact storm water runoff, and excess mill process water. Average wastewater treatment discharge rate is expected to be about 375 gallons per minute (gpm) but may range from a low of 67 gpm to a high of about 636 gpm. See the project's Mine Permit Application for detailed description of the process.

8. Treatment System Description (describe any treatment given to wastewaters prior to discharge from this outfall)

☐ No treatment provided (continue to 11)

(See Attachment 1)

9. Schematic Diagram of Treatment System - Attach to this application a schematic diagram of your wastewater treatment system. Show all bypasses, sample locations and treatment units and processes.

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

B. SURFACE WATER OUTFALL LOCATION, WASTEWATER SOURCES AND TREATMENT TECHNOLOGIES

10. Sludge Disposal - Does your wastewater treatment system produce a sludge?

☐ No
☑ Yes If yes, where do you dispose your wastewater treatment system sludge?

☐ Land Application
☐ Landfill
☐ Haul to or by Other Permitted Facility

Facility Name _____

WPDES Permit No. WI- ___ ___ ___ ___ ___ ___ ___

☑ Other (See Attachment 1)

11. Additives - Provide the number of biocides, water quality conditioners and process additives that you add at any one time to the waters discharged from this outfall. **(See Attachment 1)**

0 Biocides (chlorine and other halogens, fungicides, algalcides, herbicides, bacterial control chemicals, etc.)

7 Water Quality Conditioners (water and wastewater treatment chemicals including scale and corrosion inhibitors, chemical conditioning agents, pH adjustment chemicals, alum, ferric chloride (pickle liquor) polymers, ammonia, phosphorus, defoamers, etc)

0 Process Additives (limited to dyes and surfactants)

0 How many of the biocides are used less frequently than once in any four day period?

0 How many of the water quality conditioners and process additives are used less frequently than once in any four day period?

12. Biological Toxicity Data - In the last five years, have any biological tests for acute or chronic toxicity been made on the discharge from this outfall or on the receiving water in relation to the discharge from this outfall?

☑ No
☐ Yes If yes, provide all test dates and types below and attach to this application test results for those tests not previously submitted to the Department.

Dates	Type or Test

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C. LAND APPLICATION DISCHARGE, WASTEWATER SOURCES AND TREATMENT TECHNOLOGIES (See Attachment 1)

1. Type of Land Application System

☐ Liquid Wastes (complete item 2)	(Liquid wastes include silage leachate, whey, whey permeate and filtrate, contact cooling water, cooling and boiler water containing water treatment additives and wash water generated in industrial, commercial and agricultural operations excluding certain fruit and vegetable washing facilities.)
☐ By-products Solids (continue with 3)	(By-product solids are waste materials from animal product or food processing industries including remains of butchered animals, paunch manure, leaves, cuttings, peelings and fresh or actively fermenting sweet corn silage.)
☑ Sludge (continue with 3)	(Sludge means the accumulated solids generated during biological, physical or chemical treatment, coagulation or sedimentation of water or wastewater.)

2. Will liquid wastes be stored in a manure storage facility prior to land application? **NA**

☐ No
☐ Yes If yes, provide the information requested below for *each* storage facility.

Location (legal description) _____

Owner's Name _____

Owner's Address

P.O. Box, Street Address or Route _____

City or Village, State and Zip Code _____

Volume of manure storage facility _____ gallons

Volume of liquid waste to each storage facility _____ gallons

Does the manure storage facility meet Soil Conservation Service design requirements? ☐ Yes ☐ No

(Please list any additional manure storage facilities on a separate sheet of paper and attach it to this application.)

3. Sources - What is the source of liquid wastes, by-product solids or sludge?

Sanitary Wastewater Treatment Facility

4. Volume - How much liquid wastes, by-product solids or sludge is land applied in an average year?

_____ gallons per year of liquid wastes

_____ tons per year of by-product solids

8.4 tons per year of sludge

(See Attachment 1)

5. Application Frequency - How often will liquid wastes, by-product solids or sludge be land applied in an average year? _____ days

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C. LAND APPLICATION DISCHARGE, WASTEWATER SOURCES AND TREATMENT TECHNOLOGIES (See Attachment 1)

6. Site Identification - Do all of your land application sites have Department ID numbers? **(See Attachment 1)**

☐ Yes
☐ No If no, for each site that lacks a Department ID number, please submit a Land Application Approval Form for Land Application, Form 3400-122.

6. Land Application Contact Person **(See Attachment 1)**

☐ Facility Contact Person as provided in Section I, A (continue to 7)
☐ Other (specify below)

Name _____

Title _____

Telephone Numbers (___ ___ ___) ___ ___ ___ - ___ ___ ___ ___, FAX (___ ___ ___) ___ ___ ___ - ___ ___ ___ ___

Mailing Address

P.O. Box, Street Address or Route _____

City or Village, State and Zip Code _____

7. Storage - How is liquid wastes, by-product solids or sludge storage provided?

☑ On-site ☐ Off-site (owned by permittee) ☐ Off-site (contracted)

8. Waste Hauler - Who hauls the liquid wastes, by-products solids or sludge to the land application site?

☐ Facility Personnel
☐ Contract Hauler (specify below)

Name to be determined

Company _____

☐ Other (specify) _____

9. Management Plan - Do you have an approved management plan for the operation of the land treatment system?

☑ No
☐ Yes If yes:

a. When was the management plan approved by the Department? _____
b. Have any changes occurred in your land treatment system or in the operation of the system since the management plan was approved?

☐ No
☐ Yes If yes, describe the changes below.

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

D. GROUNDWATER MONITORING INFORMATION

1. Groundwater Monitoring - Does your current WPDES permit contain groundwater monitoring requirements? NA

☐ No
☐ Yes. If yes, are the Turn-Around Documents (Form 3400-73) issued by the Department during the term of your current WPDES permit consistent with the groundwater monitoring requirements of the current WPDES permit?

☐ Yes
☐ No. If no, please note the inconsistencies below.

2. Land Use Changes - Have there been any land use changes on the facility's property and/or land treatment site(s) during the term of the current WPDES permit? (See the instructions for further details describing "land use changes".)

NA

☐ No
☐ Yes If yes, please describe the land use changes below.

3. Superfluous Wells - Are there any operable groundwater monitoring wells on the facility's property and/or land treatment site(s) that are <u>not</u> required to be monitored by your current WPDES permit or any other DNR Authority?

NA

☐ No
☐ Yes. If yes, complete the table below and explain why the well(s) have not been abandoned. (See the instructions for further details.)

Well No.	Treatment Site the Well Monitors	Township, Range, 1/4, 1/4 Section	WPDES/Wastewater Authority or Other

Explain why the well(s) have not been abandoned.

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

D. GROUNDWATER MONITORING INFORMATION

4. Abandoned Wells - Have you abandoned any groundwater monitoring wells at your facility/site(s) during the term of your current WPDES permit?

NA

☐ No
☐ Yes. If yes, complete the table below and, if you did not do so at the time of abandonment, attach Form 3300-5B, Well/Drillhole/Borehole Abandonment for each well that has been abandoned. (See the instructions for further details.)

Well No.	Treatment Site the Well Monitors	Township, Range, 1/4, 1/4 Section	WPDES/Wastewater Authority or Other

5. New Wells - Have any new wells been installed on the facility's property and/or land treatment site(s) during the term of your current WPDES permit?

NA

☐ No
☐ Yes. If yes, complete the table below and , if you did not do so at the time of installation, attach Monitoring Well Construction Form 4400-113A, Well Development Form 4400-113B, Soil Boring Log Information Form 4400-122 and a site map showing well locations. (See the instructions for further details.)

Well No.	Treatment Site the Well Monitors	Township, Range, 1/4, 1/4 Section	WPDES/Wastewater Authority or Other

Section III

III. EFFLUENT CHARACTERISTICS

A. NON-CONTACT COOLING WATER WITHOUT ADDITIVES NA

You are required to complete Section A for each surface water outfall that discharges **non-contact cooling water free from additives**. You must sample the discharge and test for all parameters listed in Table A-1. If you have more than one discharge of non-contact cooling water without additives, please make a copy of Section A for each additional outfall. (See the instructions if two or more outfalls discharge identical wastewaters.) If you test any parameter more frequently than required by Table A-1, use Table A-2 to report the results.

A-1. EFFLUENT MONITORING REPORT FORM

Were all effluent samples properly preserved and handled, and are they representative of normal operating conditions?

☐ Yes ☐ No. If no, please collect and test another discharge sample.

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)
321	Ammonia Nitrogen			mg/L as N										
66	BOD_5 (Biochemical Oxygen Demand -five day)			mg/L										
105	Chlorides, Total			mg/L										
342	Oil and Grease			mg/L										
377	pH			s.u.										
388	Total Phosphorus (7723-14-0)			mg/L as P										
457	Total Suspended Solids			mg/L										
488	Temperature (winter)			°F										
487	Temperature (summer)			°F										

Explain QC flags here:

?. EFFLUENT CHARACTERISTICS (continued)

A-2. ADDITIONAL MONITORING FORM

If you know or have reason to believe that any parameter listed in Tables 1 and 2 of the instructions is present in the discharge from this outfall AND you have not already provided a sample result in Table A-1, you must list the parameter below in Table A-2 and either provide at least one sample result for the pollutant, check the "Intake" column if you expect the parameter is present in the discharge solely as a result of its presence in your intake water, OR check the "DMR" column if you have provided a sample result for the parameter in a recent Discharge Monitoring Report. Check one of the following:

☐ I believe all parameters in Tables 1 and 2 are absent from the discharge with the exception of those that I have reported in Table A-1.

☐ I believe all parameters in Tables 1 and 2 are absent from the discharge with the exception of those that I have reported in Table A-1 or listed below in Table A-2.

Table A-2 may also be used to report test results for any parameter that is tested more frequently than required by Table A-1.

Were all effluent samples properly preserved and handled, and are they representative of normal operating conditions?

☐ Yes ☐ No. If no, please collect and test another discharge sample.

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)

Explain QC flags here:

?. **EFFLUENT CHARACTERISTICS (continued)**

A-2 (continued). **ADDITIONAL MONITORING FORM**

Were all effluent samples properly preserved and handled, and are they representative of normal operating conditions?

☐ Yes ☐ No. If no, please collect and test another discharge sample.

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)

Explain QC flags here:

?. EFFLUENT CHARACTERISTICS (continued)

A-3. HAZARDOUS SUBSTANCES

If you know or have reason to believe that any substance listed in Table 3 of the instructions is present in the discharge from this outfall, you must list the substance below in Table A-3, provide any monitoring data that you may have, check the "Intake" column if you expect the parameter is present in the discharge solely as a result of its presence in your intake water, check the "DMR" column if you have provided a sample result for the substance in a recent Discharge Monitoring Report and explain why you believe the substance is present in the discharge. (NOTE: No analytical testing is required for Table 3 substances.) Check one of the following.

☐ I believe all substances in Table 3 are absent from the discharge.

☐ I believe all substances in Table 3 are absent from the discharge with the exception of those that I have listed below in Table A-2.

Parameter Code	Parameter Name	Sample Result	Units	DMR (✓)	Intake (✓)	Explanation of Presence in Discharge

?. EFFLUENT CHARACTERISTICS (continued)

A-4. DISCHARGE MONITORING REPORT (DMR) INFORMATION

Check one of the following statements regarding the information that you provided in Tables A-1, A-2 and A-3.

- ☐ I did not check the "DMR" column for any of the substances listed in Tables A-1, A-2 and A-3.
- ☐ For those parameters listed in Tables A-1, A-2 and A-3 for which I have checked the "DMR" column, I believe that Discharge Monitoring Report data for the last 36 months are representative of the current effluent quality from this outfall.
- ☐ For those parameters listed in Tables A-1, A-2 and A-3 for which I have checked the "DMR" column, I believe that Discharge Monitoring Report data covering a time period from _____ (day/month/year) to _____ (day/month/year) are representative of the current effluent quality from this outfall. The reason for my belief is as follows:
- ☐ Certain of the data previously submitted on Discharge Monitoring Reports (DMRs) are not representative of the current effluent quality from this outfall. The data and the reasons for them not being representative are as follows:

?. EFFLUENT CHARACTERISTICS (continued)

B. SECONDARY INDUSTRY PROCESS WASTEWATER AND NON-CONTACT COOLING WATER WITH ADDITIVES NA

You are required to complete Section B for each surface water outfall that discharges **process wastewaters from a secondary industry and/or non-contact cooling water with additives**. You must sample the discharge and test for all parameters listed in Table B-1. If you have more than one discharge of secondary industry process wastewater and/or noncontact cooling water with additives, please make a copy of Section B for each additional outfall. (See the instructions if two or more outfalls discharge identical wastewaters.) If you test any parameter more frequently than required by Table B-1, use Table B-2 to report the results.

B-1. EFFLUENT MONITORING REPORT FORM

Were all effluent samples properly preserved and handled, and are they representative of normal operating conditions?

☐ Yes ☐ No. If no, please collect and test another discharge sample.

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)
321	Ammonia Nitrogen (Submit a minimum of 4 sample results collected at least 1 month apart)			mg/L as N										
				mg/L as N										
				mg/L as N										
				mg/L as N										
66	BOD_5 (Biochemical Oxygen Demand - five day)			mg/L										
140	COD (Chemical Oxygen Demand)			mg/L										
112	Chlorine, Total Residual			µg/L										
105	Chlorides, Total			mg/L										
342	Oil and Grease			mg/L										

?. EFFLUENT CHARACTERISTICS (continued)

B-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)
377	pH			s.u.										
388	Phosphorus, Total (7723-14-0) (Submit a minimum of 4 sample results collected at least 1 month apart)			mg/L as P										
				mg/L as P										
				mg/L as P										
				mg/L as P										
488	Temperature (winter)			°F										
487	Temperature (summer)			°F										
34	Arsenic, Total Recoverable (7440-36-0)			µg/L										
88	Cadmium, Total Recoverable (7440-38-2)			µg/L										
133	Chromium, Total Recoverable (7440-47-3)			µg/L										
147	Copper, Total Recoverable (7440-50-8) (Submit a minimum of 4 sample results collected at least 3 days apart)			µg/L										
				µg/L										
				µg/L										
				µg/L										
264	Lead, Total Recoverable (7439-92-1)			µg/L										
280	Mercury, Total Recoverable (7439-97-6)			µg/L										

?. EFFLUENT CHARACTERISTICS (continued)

B-1 (continued). **EFFLUENT MONITORING REPORT FORM**

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)
315	Nickel, Total Recoverable (7440-02-0)			µg/L										
553	Zinc, Total Recoverable (7440-66-6)			µg/L										
231	Hardness (as $CaCO_3$) (Submit a minimum of 4 sample results collected at least 3 days apart)			mg/L										
				mg/L										
				mg/L										
				mg/L										

Explain QC flags here:

?. EFFLUENT CHARACTERISTICS (continued)

B-2. ADDITIONAL MONITORING FORM

If you know or have reason to believe that any parameter listed in Tables 1 and 2 of the instructions is present in the discharge from this outfall AND you have not already provided a sample result in Table B-1, you must list the parameter below in Table B-2 and either provide at least one sample result for the pollutant, check the "Intake" column if you expect the parameter is present in the discharge solely as a result of its presence in your intake water, OR check the "DMR" column if you have provided a sample result for the parameter in a recent Discharge Monitoring Report. Check one of the following:

☐ I believe all parameters in Tables 1 and 2 are absent from the discharge with the exception of those that I have reported in Table A-1.

☐ I believe all parameters in Tables 1 and 2 are absent from the discharge with the exception of those that I have reported in Table A-1 or listed below in Table A-2.

Table B-2 may also be used to report test results for any parameter that is tested more frequently than required by Table B-1.

Were all effluent samples properly preserved and handled, and are they representative of normal operating conditions?

☐ Yes ☐ No. If no, please collect and test another discharge sample.

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)

Explain QC Flags here:

?. **EFFLUENT CHARACTERISTICS (continued)**

B-2 (continued). **ADDITIONAL MONITORING FORM**

Were all effluent samples properly preserved and handled, and are they representative of normal operating conditions?

☐ Yes ☐ No. If no, please collect and test another discharge sample.

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)

Explain QC flags here:

?. EFFLUENT CHARACTERISTICS (continued)

B-3. HAZARDOUS SUBSTANCES

If you know or have reason to believe that any substance listed in Table 3 of the instructions is present in the discharge from this outfall, you must list the substance below in Table B-3, provide any monitoring data that you may have, check the "Intake" column if you expect the parameter is present in the discharge solely as a result of its presence in your intake water, check the "DMR" column if you have provided a sample result for the substance in a recent Discharge Monitoring Report and explain why you believe the substance is present in the discharge. (NOTE: No analytical testing is required for Table 3 substances.) Check one of the following.

☐ I believe all substances in Table 3 are absent from the discharge.

☐ I believe all substances in Table 3 are absent from the discharge with the exception of those that I have listed below in Table A-2.

Parameter Code	Parameter Name	Sample Result	Units	DMR (✓)	Intake (✓)	Explanation of Presence in Discharge

?. EFFLUENT CHARACTERISTICS (continued)

B-4. DISCHARGE MONITORING REPORT (DMR) INFORMATION

Check one of the following statements regarding the information that you provided in Tables B-1, B-2 and B-3.

- ☐ I did not check the "DMR" column for any of the substances listed in Tables B-1, B-2 and B-3.
- ☐ For those parameters listed in Tables B-1, B-2 and B-3 for which I have checked the "DMR" column, I believe that Discharge Monitoring Report data for the last 36 months are representative of the current effluent quality from this outfall.
- ☐ For those parameters listed in Tables B-1, B-2 and B-3 for which I have checked the "DMR" column, I believe that Discharge Monitoring Report data covering a time period from _____ (day/month/year) to _____ (day/month/year) are representative of the current effluent quality from this outfall. The reason for my belief is as follows:
- ☐ Certain of the data previously submitted on Discharge Monitoring Reports (DMRs) are not representative of the current effluent quality from this outfall. The data and the reasons for them not being representative are as follows:

?. EFFLUENT CHARACTERISTICS (continued)

For discharges of noncontact cooling water, contact cooling water, boiler blowdown and/or cooling tower blowdown, complete Table B-5, submit a Material Safety Data Sheet (MSDS), and provide at least one 48-hour LC_{50} or EC_{50} value for *Daphnia magna* or *Ceriodaphnia dubia* and at least one 96-hour LC_{50} or EC_{50} value for fathead minnow, rainbow trout or bluegill for all additives including biocides (chlorine and other halogens, fungicides, algalcides, herbicides, bacterial control chemicals, etc.) and water quality conditioners (dechlorination chemicals, alum, polymers, scale and corrosion inhibitors, pH adjustment chemicals, conditioning agents, etc.) that you add to the waters being discharge. Toxicity data are not required for additives with active ingredients consisting of only chlorine, hypochlorite, sulfuric or hydrochloric acids, or sodium hydroxide.

B-5. ADDITIVES

Additive Name and Manufacturer	Purpose of Additive	Slug or Continuous Feed	Quantity Used (gal or lbs/day)	Frequency of Use (days/week)	Concentration Maintained Within the System (ppm)	Systems With Blowdown (e.g., cooling towers and boilers)	
						Volume of System (gal)	Blowdown Volume (gal/day)

Outfall No. 007

?. EFFLUENT CHARACTERISTICS (continued)

C. PRIMARY INDUSTRY PROCESS WASTEWATER (See Attachment 1)

You are required to complete Section C for each surface water outfall that discharges **process wastewaters, other than non-contact cooling water, from a primary industry**. You must sample the discharge and test for the parameters listed in Table C-1 under the headings "Common Pollutants" and "Metals, Cyanide, Hardness & Phenols." You are also required to test for the parameters under each of the remaining headings (GC/MS Fractions) as specified for your industrial category in Table 4 of the instructions. See the instructions to determine if you must test for dioxin and furan congeners. If you have more than one discharge of primary industry process wastewater, please make a copy of Section C for each additional outfall. (See the instructions if two or more outfalls discharge identical wastewaters.) If you test any parameter more frequently than required by Table C-1, use Table C-2 to report the results.

From Table 4 of the instructions, indicate below which industrial category or categories that contribute process wastewaters to the discharge from this outfall and which GC/MS fractions you must test.

Industrial Categories Ore Mining

☐ Volatile ☐ Base/Neutral ☑ Acid ☐ Pesticide

C-1. EFFLUENT MONITORING REPORT FORM

Were all effluent samples properly preserved and handled, and are they representative of normal operating conditions? NA

☐ Yes ☐ No. If no, please collect and test another discharge sample.

Parameter Code	Parameter Name (CAS No.)	Estimated[1] Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)
COMMON POLLUTANTS														
321	Ammonia Nitrogen (Submit a minimum of 4 sample results collected at least 1 month apart)	0.29		mg/L as N										
				mg/L as N										
				mg/L as N										
				mg/L as N										
66	BOD_5 (Biochemical Oxygen Demand - five day)	$<10^2$		mg/L										

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Estimated[1] Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)
140	COD (Chemical Oxygen Demand)	$<10^2$		mg/L										
112	Chlorine, Total Residual	NA[3]		µg/L										
105	Chlorides, Total	<0.14		mg/L										
342	Oil and Grease	NA[3]		mg/L										
377	pH	—[4]		s.u.										
388	Phosphorus, Total (723-14-00) (Submit a minimum of 4 sample results collected at least 1 month apart)	NA[3]		mg/L as P										
				mg/L as P										
				mg/L as P										
				mg/L as P										
457	Suspended Solids, Total	NA[3]		mg/L										
487	Temperature (summer)	80		°F										
488	Temperature (winter)	40		°F										

Explain QC Flags here:

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Estimated[1] Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)
METALS, CYANIDE, HARDNESS & PHENOLS														
31	Antimony, Total Recoverable (7440-36-0)	0.77		µg/L										
35	Arsenic, Total Recoverable (7440-38-2)	0.064		µg/L										
50	Beryllium, Total Recoverable (7440-41-7)	<0.06		µg/L										
87	Cadmium, Total Recoverable (7440-43-9)	<0.007		µg/L										
131	Chromium, Hexavalent	<0.15		µg/L										
133	Chromium, Total Recoverable (7440-47-3)	0.15		µg/L										
147	Copper, Total Recoverable (7440-50-8) (Submit a minimum of 4 sample results collected at least 3 days apart)	1.6		µg/L										
				µg/L										
				µg/L										
				µg/L										
155	Cyanide, Total (57-12-5)	<3.4		µg/L										
152	Cyanide, Amenable to Chlorination	<3.4		µg/L										
264	Lead, Total Recoverable (7439-92-1)	<0.025		µg/L										

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Estimated[1] Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)
280	Mercury, Total Recoverable (7439-97-6) (Submit a minimum of 3 sample results collected at least 3 days apart)	<0.00006		µg/L										
				µg/L										
				µg/L										
315	Nickel, Total Recoverable (7440-02-0)	0.17		µg/L										
423	Selenium, Total Recoverable (7782-49-2)	0.67		µg/L										
430	Silver, Total Recoverable (7440-22-4)	0.42		µg/L										
494	Thallium, Total Recoverable (7440-28-0)	0.20		µg/L										
553	Zinc, Total Recoverable (7440-66-6)	<3.9		µg/L										
231	Hardness (as $CaCO_3$) (Submit a minimum of 4 sample results collected at least 3 days apart)	10		mg/L										
				mg/L										
				mg/L										
				mg/L										
382	Phenols, Total	NA[3]		µg/L										

Explain QC flags here:

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
	VOLATILE COMPOUNDS	**NA[5]**													
6	Acrolein (107-02-8)			µg/L											
8	Acrylonitrile (107-13-1)			µg/L											
40	Benzene (71-43-2)			µg/L											
79	Bromodichloro-methane (dichlorobromo-methane) (75-27-4)			µg/L											
80	Bromoform (75-25-2)			µg/L											
93	Carbon Tetrachloride (56-23-5)			µg/L											
113	Chlorobenzene (108-90-7)			µg/L											
115	Chlorodibromo-methane (124-48-1)			µg/L											
117	Chloroethane (75-00-3)			µg/L											
118	Chloroform (67-66-3)			µg/L											
568	1,2-Dichloro-benzene (95-50-1)			µg/L											
581	1,3-Dichloro-benzene (541-73-1)			µg/L											

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
587	1,4-Dichloro-benzene (106-46-7)			µg/L											
556	1,1-Dichloroethane (75-34-3)			µg/L											
570	1,2-Dichloroethane (107-06-2)			µg/L											
558	1,1-Dichloro-ethylene (75-35-4)			µg/L											
567	*cis*-1,2-Dichloro-ethylene (159-59-2)			µg/L											
576	*trans*-1,2-Dichloroethylene (156-60-5)			µg/L											
573	1,2-Dichloro-propane (78-87-5)			µg/L											
583	1,3-Dichloro-propane (142-28-9)			µg/L											
560	1,1-Dichloro-propylene (563-58-6)			µg/L											
580	*cis*-1,3-Dichloro-propylene (10061-01-5)			µg/L											
585	*trans*-1,3-Dichloropropylene (10061-02-6)			µg/L											
598	2,3-Dichloro-propylene (78-88-6)			µg/L											

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
200	Ethylbenzene (100-41-4)			µg/L											
82	Methyl Bromide (bromomethane) (74-83-9)			µg/L											
120	Methyl Chloride (chloromethane) (74-87-3)			µg/L											
285	Methylene Chloride (dichloromethane) (75-09-2)			µg/L											
565	1,1,2,2-Tetra-chloroethane (79-34-5)			µg/L											
490	Tetrachloro-ethylene (127-18-4)			µg/L											
500	Toluene (108-88-2)			µg/L											
561	1,1,1-Trichloro-ethane (71-55-6)			µg/L											
563	1,1,2-Trichloro-ethane (79-00-5)			µg/L											
508	Trichloroethylene (79-01-6)			µg/L											
517	Vinyl Chloride (75-01-4)			µg/L											

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
	ACID EXTRACTABLE COMPOUNDS (Phenols)			**NA[5]**											
592	2-Chlorophenol (95-57-8)			µg/L											
614	3-Chlorophenol (108-43-0)			µg/L											
623	4-Chlorophenol (106-48-9)			µg/L											
597	2,3-Dichloro-phenol (576-24-9)			µg/L											
603	2,4-Dichloro-phenol (120-83-2)			µg/L											
610	2,5-Dichloro-phenol (583-78-8)			µg/L											
611	2,6-Dichloro-phenol (87-65-0)			µg/L											
620	3,4-Dichloro-phenol (95-77-2)			µg/L											
604	2,4-Dimethyl-phenol (105-67-9)			µg/L											
599	2,3-Dinitrophenol (66-56-8)			µg/L											
605	2,4-Dinitrophenol (51-28-5)			µg/L											
609	2,5-Dinitrophenol (329-71-5)			µg/L											

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
594	2-Methyl-4-chlorophenol (1570-64-5)			µg/L											
615	3-Methyl-4-chlorophenol (*para*-chloro-*meta*-cresol) (59-50-7)			µg/L											
616	3-Methyl-6-chlorophenol (615-74-7)			µg/L											
593	2-Methyl-4,6-dinitrophenol (4,6-dinitro-*ortho*-cresol) (534-52-1)			µg/L											
596	2-Nitrophenol (88-75-5)			µg/L											
624	4-Nitrophenol (100-02-7)			µg/L											
368	Pentachlorophenol (87-86-5)			µg/L											
	Phenol (108-95-2)			µg/L											
600	2,3,4,6-Tetrachlorophenol (58-90-2)			µg/L											
607	2,4,5-Trichlorophenol (95-95-4)			µg/L											
608	2,4,6-Trichloro phenol (88-06-2)			µg/L											

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
	BASE/NEUTRAL COMPOUNDS **NA[5]**														
2	Acenaphthene (83-32-9)			µg/L											
4	Acenaphthylene (208-96-8)			µg/L											
42	Benzidine (92-87-5)			µg/L											
61	Bis(2-*chloro-ethoxy*) Methane (111-91-1)			µg/L											
62	Bis(2-*chloroethyl*) Ether (111-44-4)			µg/L											
63	Bis(2-*chloroiso-propyl*) Ether (102-60-1)			µg/L											
64	Bis(2-*ethylhexyl*) Phthalate (117-81-7)			µg/L											
621	4-Bromophenyl Phenyl Ether (101-55-3)			µg/L											
84	Butyl Benzyl Phthalate (85-68-7)			µg/L											
591	2-Chloro-naphthalene (91-58-7)			µg/L											
622	4-Chlorophenyl Phenyl Ether (7005-72-3			µg/L											

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
617	3,3'-Dichloro-benzidine (91-94-1)			µg/L											
178	Diethyl Phthalate (84-66-2)			µg/L											
181	Dimethyl Phthalate (131-11-3)			µg/L											
167	Di-*n*-butyl Phthalate (84-74-2)			µg/L											
606	2,4-Dinitrotoluene (121-14-2)			µg/L											
612	2,6-Dinitrotoluene (606-20-2)			µg/L											
169	Di-*n*-octyl Phthalate (117-84-0)			µg/L											
574	1,2-Diphenyl-hydrazine (122-66-7)			µg/L											
240	Hexachloroethane (67-72-1)			µg/L											
253	Isophorone (78-59-1)			µg/L											
298	N-Nitroso-*n*-butylamine (924-16-3)			µg/L											
301	N-Nitroso-diethylamine (55-18-5)			µg/L											
302	N-Nitroso-dimethylamine (62-75-9)			µg/L											

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
304	N-Nitroso-diphenylamine (86-30-6)			µg/L											
299	N-Nitroso-di-*n*-propylamine (621-64-7)			µg/L											
306	N-Nitroso-pyrrolidine (930-55-2)			µg/L											
307	Naphthalene (91-20-3)			µg/L											
317	Nitrobenzene (98-95-3)			µg/L											
577	1,2,4-Trichloro-benzene (120-82-1)			µg/L											
234	Hexachloro-benzene (118-84-1)			µg/L											
236	Hexachloro-butadiene (87-68-3)			µg/L											
238	Hexachlorocyclo-pentadiene (77-47-4)			µg/L											
367	Pentachloro-benzene (608-93-5)			µg/L											
579	1,2,4,5-Tetra-chlorobenzene (95-94-3)			µg/L											
28	Anthracene (120-12-7)			µg/L											

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
43	Benzo(*a*)-anthracene (56-55-3)			µg/L											
44	Benzo(*a*)pyrene (50-32-8)			µg/L											
45	Benzo(*b*)-fluoranthene (205-99-2)			µg/L											
46	Benzo(*ghi*)perylene (191-24-2)			µg/L											
47	Benzo(*k*)-fluoranthene (207-08-9)			µg/L											
135	Chrysene (218-01-9)			µg/L											
172	Dibenzo(*a,h*)-anthracene (53-70-3)			µg/L											
213	Fluoranthene (206-44-0)			µg/L											
215	Fluorene (86-73-7)			µg/L											
244	Indeno-(1,2,3-*cd*)pyrene (193-39-5)			µg/L											
350	Phenanthrene (85-01-8)			µg/L											
403	Pyrene (129-00-0)			µg/L											

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
PESTICIDES															
16	Aldrin (309-00-2)			µg/L											
56	*alpha*-BHC (α-hexachloro-cyclohexane) (319-84-6)			µg/L											
51	*beta*-BHC (β-hexachloro-cyclohexane) (319-85-7)			µg/L											
57	*delta*-BHC (δ-hexachloro-cyclohexane) (58-89-9)			µg/L											
58	*gamma*-BHC (γ-hexachloro-cyclohexane, Lindane) (319-86-8)			µg/L											
103	Chlordane (57-74-9)			µg/L											
629	4,4'-DDT (50-29-3)			µg/L											
628	4,4'-DDE (72-55-9)			µg/L											
627	4,4'-DDD (72-54-8)			µg/L											
176	Dieldrin (60-57-1)			µg/L											
194	*alpha*-Endosulfan (115-29-7)			µg/L											

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
195	*beta*-Endosulfan (115-29-7)			µg/L											
196	Endosulfan Sulfate (1031-07-8)			µg/L											
197	Endrin (72-20-8)			µg/L											
198	Endrin Aldehyde (7421-93-4)			µg/L											
232	Heptachlor (76-44-8)			µg/L											
233	Heptachlor epoxide (1024-57-3)			µg/L											
506	Toxaphene (8001-35-2)			µg/L											
122	Chlorpyrifos (2921-88-2)			µg/L											
350	Parathion (ethyl) (56-38-2)			µg/L											
351	Parathion (methyl) (298-00-0)			µg/L											
353	PCB-1016 (12674-11-2)			µg/L											
355	PCB-1221 (11104-28-2)			µg/L											
356	PCB-1232 (11141-16-5)			µg/L											
357	PCB-1242 (53469-21-9)			µg/L											
359	PCB-1248 (12672-29-6)			µg/L											

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
361	PCB-1254 (11097-69-1)			µg/L											
363	PCB-1260 (11096-82-5)			µg/L											

Explain QC flags here:

?. EFFLUENT CHARACTERISTICS (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)

Explain QC flags here:

Notes:

[1] The estimated treated effluent quality is based on average water balance flows and engineering judgement. Effluent quality based on treatment through the reverse osmosis process.
[2] Based on engineering judgement.
[3] Significant quantities of this parameter are not expected based on engineering judgement.
[4] pH will be controlled in the treatment process.
[5] None of these chemicals will be used as raw materials and are not expected to be present in the wastewater.

?. EFFLUENT CHARACTERISTICS (continued)

C-2. ADDITIONAL MONITORING FORM

If you know or have reason to believe that any pollutant listed in Tables 1 and 2 of the instructions is present in the discharge from this outfall AND you have not already provided a sample result in Table C-1, you must either provide at least one sample result for the pollutant, check the "Intake" column if you expect the pollutant is present in the discharge solely as a result of its presence in your intake water, OR check the "DMR" column if you have provided a sample result for the pollutant in a recent Discharge Monitoring Report. Use either Table C-1 or the following table to report the required information. Check one of the following:

☐ I believe all pollutants in Tables 1 and 2 are absent from the discharge with the exception of those that I have reported in Table C-1.

☑ I believe all pollutants in Tables 1 and 2 are absent from the discharge with the exception of those that I have reported in Table C-1 or listed below in Table C-2.

Table C-2 may also be used to report test results for any parameter that is tested more frequently than required by Table C-1.

Were all effluent samples properly preserved and handled, and are they representative of normal operating conditions?

☐ Yes ☐ No. If no, please collect and test another discharge sample.

Parameter Code	Parameter Name (CAS No.)	Estimated[1] Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
	Nitrogen, Nitrate	0.21		mg/L											
	Sulfate (1408-79-8)	14		mg/L											
	Sulfide	NA[2]													

Explain QC flags here:

?. EFFLUENT CHARACTERISTICS (continued)

C-2 (continued). ADDITIONAL MONITORING FORM

Were all effluent samples properly preserved and handled, and are they representative of normal operating conditions? NA

☐ Yes ☐ No. If no, please collect and test another discharge sample.

Parameter Code	Parameter Name (CAS No.)	Estimated[1] Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
	Barium	<0.0054		mg/L											
	Total Recoverable (7440-39-3)														
	Boron	<0.0028		mg/L											
	Total Recoverable (7440-42-8)														
	Iron	<0.039		mg/L											
	Total Recoverable (7439-89-6)														
	Magnesium	0.35		mg/L											
	Total Recoverable (7439-95-4)														
	Manganese	<0.00043		mg/L											
	Total Recoverable (7439-96-5)														

Explain QC flags here:

Notes:

[1] The estimated treated effluent quality is based on average water balance flows and engineering judgement. Effluent quality based on treatment through the reverse osmosis process.

[2] Significant quantities of this parameter are not expected based on engineering judgement.

?. EFFLUENT CHARACTERISTICS (continued)

C-3. HAZARDOUS SUBSTANCES

If you know or have reason to believe that any substance listed in Table 3 of the instructions is present in the discharge from this outfall, you must list the substance below in Table C-3, provide any monitoring data that you may have, check the "Intake" column if you expect the parameter is present in the discharge solely as a result of its presence in your intake water, check the "DMR" column if you have provided a sample result for the substance in a recent Discharge Monitoring Report and explain why you believe the substance is present in the discharge. (NOTE: No analytical testing is required for Table 3 substances.) Check one of the following.

☑ I believe all substances in Table 3 are absent from the discharge.

☐ I believe all substances in Table 3 are absent from the discharge with the exception of those that I have listed below in Table A-2.

Parameter Code	Parameter Name	Sample Result	Units	DMR (✓)	Intake (✓)	Explanation of Presence in Discharge

?. EFFLUENT CHARACTERISTICS (continued)

C-4. DISCHARGE MONITORING REPORT INFORMATION

Check one of the following statements regarding the information that you provided in Tables C-1, C-2 and C-3. **NA**

- ☐ I did not check the "DMR" column for any of the substances listed in Tables C-1, C-2 and C-3.
- ☐ For those parameters listed in Tables C-1, C-2 and C-3 for which I have checked the "DMR" column, I believe that Discharge Monitoring Report data for the last 36 months are representative of the current effluent quality from this outfall.
- ☐ For those parameters listed in Tables C-1, C-2 and C-3 for which I have checked the "DMR" column, I believe that Discharge Monitoring Report data covering a time period from (day/month/year) to (day/month/year) are representative of the current effluent quality from this outfall. The reason for my belief is as follows:
- ☐ Certain of the data previously submitted on Discharge Monitoring Reports (DMRs) are not representative of the current effluent quality from this outfall. The data and the reasons for them not being representative are as follows:

Outfall Nos. 015, 016, 017

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C. PRIMARY INDUSTRY PROCESS WASTEWATER

You are required to complete Section C for each surface water outfall that discharges **process wastewaters, other than non-contact cooling water, from a primary industry**. You must sample the discharge and test for the parameters listed in Table C-1 under the headings "Common Pollutants" and "Metals, Cyanide, Hardness & Phenols." You are also required to test for the parameters under each of the remaining headings (GC/MS Fractions) as specified for your industrial category in Table 4 of the instructions. See the instructions to determine if you must test for dioxin and furan congeners. If you have more than one discharge of primary industry process wastewater, please make a copy of Section C for each additional outfall. (See the instructions if two or more outfalls discharge identical wastewaters.) If you test any parameter more frequently than required by Table C-1, use Table C-2 to report the results.

From Table 4 of the instructions, indicate below which industrial category or categories that contribute process wastewaters to the discharge from this outfall and which GC/MS fractions you must test.

Industrial Categories Ore Mining

☐ Volatile ☐ Base/Neutral ☑ Acid ☐ Pesticide

C-1. EFFLUENT MONITORING REPORT FORM

Were all effluent samples properly preserved and handled, and are they representative of normal operating conditions? **NA**

☐ Yes ☐ No. If no, please collect and test another discharge sample.

Parameter Code	Parameter Name (CAS No.)	Estimated[1] Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)
COMMON POLLUTANTS														
321	Ammonia Nitrogen (Submit a minimum of 4 sample results collected at least 1 month apart)	0.05		mg/L as N										
				mg/L as N										
				mg/L as N										
				mg/L as N										
66	BOD_5 (Biochemical Oxygen Demand - five day)	<5[2]		mg/L										

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Estimated[1] Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)
140	COD (Chemical Oxygen Demand)	<5[2]		mg/L										
112	Chlorine, Total Residual	NA[3]		µg/L										
105	Chlorides, Total	<0.14		mg/L										
342	Oil and Grease	NA[3]		mg/L										
377	pH	___[4]		s.u.										
388	Phosphorus, Total (723-14-00) (Submit a minimum of 4 sample results collected at least 1 month apart)	NA[3]		mg/L as P										
				mg/L as P										
				mg/L as P										
				mg/L as P										
457	Suspended Solids, Total	NA[3]		mg/L										
487	Temperature (summer)	80		°F										
488	Temperature (winter)	40		°F										

Explain QC Flags here:

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Estimated[1] Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)
METALS, CYANIDE, HARDNESS & PHENOLS														
31	Antimony, Total Recoverable (7440-36-0)	0.016		µg/L										
35	Arsenic, Total Recoverable (7440-38-2)	0.083		µg/L										
50	Beryllium, Total Recoverable (7440-41-7)	0.06		µg/L										
87	Cadmium, Total Recoverable (7440-43-9)	<0.007		µg/L										
131	Chromium, Hexavalent	<0.37[5]		µg/L										
133	Chromium, Total Recoverable (7440-47-3)	0.37[5]		µg/L										
147	Copper, Total Recoverable (7440-50-8) (Submit a minimum of 4 sample results collected at least 3 days apart)	0.17		µg/L										
				µg/L										
				µg/L										
				µg/L										
155	Cyanide, Total (57-12-5)	<3.4		µg/L										
152	Cyanide, Amenable to Chlorination	<3.4		µg/L										
264	Lead, Total Recoverable (7439-92-1)	<0.025		µg/L										

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Estimated[1] Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)
280	Mercury, Total Recoverable (7439-97-6) (Submit a minimum of 3 sample results collected at least 3 days apart)	0.000071		µg/L										
				µg/L										
				µg/L										
315	Nickel, Total Recoverable (7440-02-0)	0.14		µg/L										
423	Selenium, Total Recoverable (7782-49-2)	<0.33		µg/L										
430	Silver, Total Recoverable (7440-22-4)	<0.32		µg/L										
494	Thallium, Total Recoverable (7440-28-0)	0.014		µg/L										
553	Zinc, Total Recoverable (7440-66-6)	<3.9		µg/L										
231	Hardness (as $CaCO_3$) (Submit a minimum of 4 sample results collected at least 3 days apart)	5.1		mg/L										
				mg/L										
				mg/L										
				mg/L										
382	Phenols, Total	NA[3]		µg/L										

Explain QC flags here:

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
	VOLATILE COMPOUNDS NA[6]														
6	Acrolein (107-02-8)			µg/L											
8	Acrylonitrile (107-13-1)			µg/L											
40	Benzene (71-43-2)			µg/L											
79	Bromodichloro-methane (dichlorobromo-methane) (75-27-4)			µg/L											
80	Bromoform (75-25-2)			µg/L											
93	Carbon Tetrachloride (56-23-5)			µg/L											
113	Chlorobenzene (108-90-7)			µg/L											
115	Chlorodibromo-methane (124-48-1)			µg/L											
117	Chloroethane (75-00-3)			µg/L											
118	Chloroform (67-66-3)			µg/L											
568	1,2-Dichloro-benzene (95-50-1)			µg/L											
581	1,3-Dichloro-benzene (541-73-1)			µg/L											

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). **EFFLUENT MONITORING REPORT FORM**

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
587	1,4-Dichloro-benzene (106-46-7)			µg/L											
556	1,1-Dichloroethane (75-34-3)			µg/L											
570	1,2-Dichloroethane (107-06-2)			µg/L											
558	1,1-Dichloro-ethylene (75-35-4)			µg/L											
567	*cis*-1,2-Dichloro-ethylene (159-59-2)			µg/L											
576	*trans*-1,2-Dichloroethylene (156-60-5)			µg/L											
573	1,2-Dichloro-propane (78-87-5)			µg/L											
583	1,3-Dichloro-propane (142-28-9)			µg/L											
560	1,1-Dichloro-propylene (563-58-6)			µg/L											
580	*cis*-1,3-Dichloro-propylene (10061-01-5)			µg/L											
585	*trans*-1,3-Dichloropropylene (10061-02-6)			µg/L											
598	2,3-Dichloro-propylene (78-88-6)			µg/L											

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). **EFFLUENT MONITORING REPORT FORM**

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
200	Ethylbenzene (100-41-4)			µg/L											
82	Methyl Bromide (bromomethane) (74-83-9)			µg/L											
120	Methyl Chloride (chloromethane) (74-87-3)			µg/L											
285	Methylene Chloride (dichloromethane) (75-09-2)			µg/L											
565	1,1,2,2-Tetra-chloroethane (79-34-5)			µg/L											
490	Tetrachloro-ethylene (127-18-4)			µg/L											
500	Toluene (108-88-2)			µg/L											
561	1,1,1-Trichloro-ethane (71-55-6)			µg/L											
563	1,1,2-Trichloro-ethane (79-00-5)			µg/L											
508	Trichloroethylene (79-01-6)			µg/L											
517	Vinyl Chloride (75-01-4)			µg/L											

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
	ACID EXTRACTABLE COMPOUNDS (Phenols)			**NA[6]**											
592	2-Chlorophenol (95-57-8)			µg/L											
614	3-Chlorophenol (108-43-0)			µg/L											
623	4-Chlorophenol (106-48-9)			µg/L											
597	2,3-Dichloro-phenol (576-24-9)			µg/L											
603	2,4-Dichloro-phenol (120-83-2)			µg/L											
610	2,5-Dichloro-phenol (583-78-8)			µg/L											
611	2,6-Dichloro-phenol (87-65-0)			µg/L											
620	3,4-Dichloro-phenol (95-77-2)			µg/L											
604	2,4-Dimethyl-phenol (105-67-9)			µg/L											
599	2,3-Dinitrophenol (66-56-8)			µg/L											
605	2,4-Dinitrophenol (51-28-5)			µg/L											
609	2,5-Dinitrophenol (329-71-5)			µg/L											

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). **EFFLUENT MONITORING REPORT FORM**

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
594	2-Methyl-4-chlorophenol (1570-64-5)			µg/L											
615	3-Methyl-4-chloro-phenol (*para*-chloro-*meta*-cresol) (59-50-7)			µg/L											
616	3-Methyl-6-chloro-phenol (615-74-7)			µg/L											
593	2-Methyl-4,6-dinitrophenol (4,6-dinitro-*ortho*-cresol) (534-52-1)			µg/L											
596	2-Nitrophenol (88-75-5)			µg/L											
624	4-Nitrophenol (100-02-7)			µg/L											
368	Pentachlorophenol (87-86-5)			µg/L											
	Phenol (108-95-2)			µg/L											
600	2,3,4,6-Tetra-chlorophenol (58-90-2)			µg/L											
607	2,4,5-Trichloro-phenol (95-95-4)			µg/L											
608	2,4,6-Trichloro phenol (88-06-2)			µg/L											

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
	BASE/NEUTRAL COMPOUNDS	**NA[6]**													
2	Acenaphthene (83-32-9)			µg/L											
4	Acenaphthylene (208-96-8)			µg/L											
42	Benzidine (92-87-5)			µg/L											
61	Bis(2-*chloro-ethoxy*) Methane (111-91-1)			µg/L											
62	Bis(2-*chloroethyl*) Ether (111-44-4)			µg/L											
63	Bis(2-*chloroiso-propyl*) Ether (102-60-1)			µg/L											
64	Bis(2-*ethylhexyl*) Phthalate (117-81-7)			µg/L											
621	4-Bromophenyl Phenyl Ether (101-55-3)			µg/L											
84	Butyl Benzyl Phthalate (85-68-7)			µg/L											
591	2-Chloro-naphthalene (91-58-7)			µg/L											
622	4-Chlorophenyl Phenyl Ether (7005-72-3			µg/L											

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
617	3,3'-Dichloro-benzidine (91-94-1)			µg/L											
178	Diethyl Phthalate (84-66-2)			µg/L											
181	Dimethyl Phthalate (131-11-3)			µg/L											
167	Di-*n*-butyl Phthalate (84-74-2)			µg/L											
606	2,4-Dinitrotoluene (121-14-2)			µg/L											
612	2,6-Dinitrotoluene (606-20-2)			µg/L											
169	Di-*n*-octyl Phthalate (117-84-0)			µg/L											
574	1,2-Diphenyl-hydrazine (122-66-7)			µg/L											
240	Hexachloroethane (67-72-1)			µg/L											
253	Isophorone (78-59-1)			µg/L											
298	N-Nitroso-*n*-butylamine (924-16-3)			µg/L											
301	N-Nitroso-diethylamine (55-18-5)			µg/L											
302	N-Nitroso-dimethylamine (62-75-9)			µg/L											

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
304	N-Nitroso-diphenylamine (86-30-6)			µg/L											
299	N-Nitroso-di-*n*-propylamine (621-64-7)			µg/L											
306	N-Nitroso-pyrrolidine (930-55-2)			µg/L											
307	Naphthalene (91-20-3)			µg/L											
317	Nitrobenzene (98-95-3)			µg/L											
577	1,2,4-Trichloro-benzene (120-82-1)			µg/L											
234	Hexachloro-benzene (118-84-1)			µg/L											
236	Hexachloro-butadiene (87-68-3)			µg/L											
238	Hexachlorocyclo-pentadiene (77-47-4)			µg/L											
367	Pentachloro-benzene (608-93-5)			µg/L											
579	1,2,4,5-Tetra-chlorobenzene (95-94-3)			µg/L											
28	Anthracene (120-12-7)			µg/L											

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). **EFFLUENT MONITORING REPORT FORM**

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
43	Benzo(*a*)-anthracene (56-55-3)			µg/L											
44	Benzo(*a*)pyrene (50-32-8)			µg/L											
45	Benzo(*b*)-fluoranthene (205-99-2)			µg/L											
46	Benzo(*ghi*)perylene (191-24-2)			µg/L											
47	Benzo(*k*)-fluoranthene (207-08-9)			µg/L											
135	Chrysene (218-01-9)			µg/L											
172	Dibenzo(*a,h*)-anthracene (53-70-3)			µg/L											
213	Fluoranthene (206-44-0)			µg/L											
215	Fluorene (86-73-7)			µg/L											
244	Indeno-(1,2,3-*cd*)pyrene (193-39-5)			µg/L											
350	Phenanthrene (85-01-8)			µg/L											
403	Pyrene (129-00-0)			µg/L											

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
	PESTICIDES **NA[6]**														
16	Aldrin (309-00-2)			µg/L											
56	*alpha*-BHC (α-hexachloro-cyclohexane) (319-84-6)			µg/L											
51	*beta*-BHC (β-hexachloro-cyclohexane) (319-85-7)			µg/L											
57	*delta*-BHC (δ-hexachloro-cyclohexane) (58-89-9)			µg/L											
58	*gamma*-BHC (γ-hexachloro-cyclohexane, Lindane) (319-86-8)			µg/L											
103	Chlordane (57-74-9)			µg/L											
629	4,4'-DDT (50-29-3)			µg/L											
628	4,4'-DDE (72-55-9)			µg/L											
627	4,4'-DDD (72-54-8)			µg/L											
176	Dieldrin (60-57-1)			µg/L											
194	*alpha*-Endosulfan (115-29-7)			µg/L											

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). EFFLUENT MONITORING REPORT FORM

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
195	*beta*-Endosulfan (115-29-7)			µg/L											
196	Endosulfan Sulfate (1031-07-8)			µg/L											
197	Endrin (72-20-8)			µg/L											
198	Endrin Aldehyde (7421-93-4)			µg/L											
232	Heptachlor (76-44-8)			µg/L											
233	Heptachlor epoxide (1024-57-3)			µg/L											
506	Toxaphene (8001-35-2)			µg/L											
122	Chlorpyrifos (2921-88-2)			µg/L											
350	Parathion (ethyl) (56-38-2)			µg/L											
351	Parathion (methyl) (298-00-0)			µg/L											
353	PCB-1016 (12674-11-2)			µg/L											
355	PCB-1221 (11104-28-2)			µg/L											
356	PCB-1232 (11141-16-5)			µg/L											
357	PCB-1242 (53469-21-9)			µg/L											
359	PCB-1248 (12672-29-6)			µg/L											

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). **EFFLUENT MONITORING REPORT FORM**

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
361	PCB-1254 (11097-69-1)			µg/L											
363	PCB-1260 (11096-82-5)			µg/L											

Explain QC flags here:

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-1 (continued). **EFFLUENT MONITORING REPORT FORM**

Parameter Code	Parameter Name (CAS No.)	Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)

Explain QC flags here:

Notes:

1 The estimated treated effluent quality is based on average water balance flows and engineering judgement. Effluent quality based on evaporator system distillate.
2 Based on engineering judgement.
3 Significant quantities of this parameter are not expected based on engineering judgement.
4 pH will be controlled in the treatment process.
5 The chromium concentration was estimated by using the higher of the two analyses performed on the condensate during the evaporation treatability study.
6 None of these chemicals will be used as raw materials and are not expected to be present in the wastewater.

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-2. ADDITIONAL MONITORING FORM

If you know or have reason to believe that any pollutant listed in Tables 1 and 2 of the instructions is present in the discharge from this outfall AND you have not already provided a sample result in Table C-1, you must either provide at least one sample result for the pollutant, check the "Intake" column if you expect the pollutant is present in the discharge solely as a result of its presence in your intake water, OR check the "DMR" column if you have provided a sample result for the pollutant in a recent Discharge Monitoring Report. Use either Table C-1 or the following table to report the required information. Check one of the following:

☐ I believe all pollutants in Tables 1 and 2 are absent from the discharge with the exception of those that I have reported in Table C-1.

☑ I believe all pollutants in Tables 1 and 2 are absent from the discharge with the exception of those that I have reported in Table C-1 or listed below in Table C-2.

Table C-2 may also be used to report test results for any parameter that is tested more frequently than required by Table C-1.

Were all effluent samples properly preserved and handled, and are they representative of normal operating conditions?

☐ Yes ☐ No. If no, please collect and test another discharge sample.

Parameter Code	Parameter Name (CAS No.)	Estimated[1] Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
	Nitrogen, Nitrate	1.6[2]		mg/L											
	Sulfate (1408-79-8)	<1.0		mg/L											
	Sulfide	NA[3]													

Explain QC flags here:

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-2 (continued). ADDITIONAL MONITORING FORM

Were all effluent samples properly preserved and handled, and are they representative of normal operating conditions? NA

☐ Yes ☐ No. If no, please collect and test another discharge sample.

Parameter Code	Parameter Name (CAS No.)	Estimated[1] Sample Result	QC Flags (explain)	Units	Detection Limit (LOD)	LOQ	Analytical Method	Confirmed Organics (Y/N)	Sample Collection Date	Extraction Date	Analysis Date	Lab ID Number	Sample Type (Co/Gr)	DMR (✓)	Intake (✓)
	Barium	<0.54		µg/L											
	Total Recoverable (7440-39-3)														
	Boron	<0.0096		mg/L											
	Total Recoverable (7440-42-8)														
	Iron	<0.039		mg/L											
	Total Recoverable (7439-89-6)														
	Magnesium	0.27		mg/L											
	Total Recoverable (7439-95-4)														
	Manganese	<0.00043		mg/L											
	Total Recoverable (7439-96-5)														

Explain QC flags here:

Notes:

1 The estimated treated effluent quality is based on average water balance flows and engineering judgement. Effluent quality based on evaporator system distillate.

2 The evaporation treatability study analysis of nitrates in the condensate was not projected to be representative of full-scale operation based on data from full-scale evaporation facilities built by the evaporator treatability study vendor, U.S. Filter/HPD, Naperville, IL. Therefore, the nitrate concentration was estimated based on engineering judgement by using typical feed to condensate carryover ratios from the evaporation treatability study.

3 Significant quantities of this parameter are not expected based on engineering judgement.

II. WASTEWATER CHARACTERIZATION, TREATMENT & DISPOSAL (continued)

C-3. HAZARDOUS SUBSTANCES

If you know or have reason to believe that any substance listed in Table 3 of the instructions is present in the discharge from this outfall, you must list the substance below in Table C-3, provide any monitoring data that you may have, check the "Intake" column if you expect the parameter is present in the discharge solely as a result of its presence in your intake water, check the "DMR" column if you have provided a sample result for the substance in a recent Discharge Monitoring Report and explain why you believe the substance is present in the discharge. (NOTE: No analytical testing is required for Table 3 substances.) Check one of the following.

☑ I believe all substances in Table 3 are absent from the discharge.

☐ I believe all substances in Table 3 are absent from the discharge with the exception of those that I have listed below in Table A-2.

Parameter Code	Parameter Name	Sample Result	Units	DMR (✓)	Intake (✓)	Explanation of Presence in Discharge

C-4. DISCHARGE MONITORING REPORT INFORMATION

Check one of the following statements regarding the information that you provided in Tables C-1, C-2 and C-3. **NA**

- ☐ I did not check the "DMR" column for any of the substances listed in Tables C-1, C-2 and C-3.
- ☐ For those parameters listed in Tables C-1, C-2 and C-3 for which I have checked the "DMR" column, I believe that Discharge Monitoring Report data for the last 36 months are representative of the current effluent quality from this outfall.
- ☐ For those parameters listed in Tables C-1, C-2 and C-3 for which I have checked the "DMR" column, I believe that Discharge Monitoring Report data covering a time period from (day/month/year) to (day/month/year) are representative of the current effluent quality from this outfall. The reason for my belief is as follows:
- ☐ Certain of the data previously submitted on Discharge Monitoring Reports (DMRs) are not representative of the current effluent quality from this outfall. The data and the reasons for them not being representative are as follows:

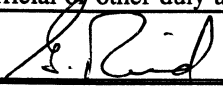
Section IV

1. ADDITIONAL COMMENTS AND SIGNATURE OF AUTHORIZED REPRESENTATIVE

A. ADDITIONAL COMMENTS

B. SIGNATURE OF AUTHORIZED REPRESENTATIVE

This application must be signed by an official representative of the permitted facility who is: the owner, the sole proprietor for a sole proprietorship, a general partner for a partnership, a principal executive officer of at least the level of vice-president, or their authorized representative responsible for the overall operation of the facility for a corporation, or a principal executive officer, ranking elected official or other duly authorized employee for a publicly owned treatment works.

1. Signature  2. Date 12/7/98

3. Typed/Printed Name Gordon Reid

Title Manager of Engineering

Telephone Numbers (715) 478-3393, FAX (715) 478-3641

4. Mailing Address

☑ Facility Mailing Address, ☐ Facility Location Address, or ☐ Owner or Responsible Party Mailing Address ☐ Other (provide below)

Company Name _____

P.O. Box, Number and Street or Route _____

City or Village, State and Zip Code _____

Attachment 1

Additional Information for Form 3400-150 of the WPDES Permit Application

I.A.3. Facility Location Address

The Crandon Project's wastewater treatment facility will be approximately located in the Southwest Quarter of Section 30, Township 35 North, Range 13 East, Town of Lincoln, Forest County, Wisconsin. The facility will be located 5 miles south of the City of Crandon and 2 miles east of State Trunk Highway 55. The facility location is shown on the attached Figures 1 and 2.

I.A.5 Wastewater Treatment System Operator-In-Charge

This question is not applicable since the wastewater treatment facility is yet to be built.

I.D. Site Map

Figures 1, 2, 4 and 5 provide relevant site and topographic information. More detailed information can be obtained from the project's *Preliminary Engineering Report for Wastewater Treatment Facilities* (Foth & Van Dyke, 1995/1998).

II.A.6. Water Supply - What are the facility's sources of water?

The site runoff flow consists of the precipitation entering the various storage and runoff basins throughout the facility. Non-contact stormwater precipitation is not included. The evaporation from the storage basins is not subtracted from this precipitation flow. A more detailed accounting of the overall mill water balance is shown on Figure 3.

II.B.4 Seasonal or Intermittent Discharges (Outfalls 015, 016, 017)

Discharges to Skunk Lake, Little Sand Lake, and Duck Lake are based on the need for mitigation and will typically occur in late winter and late summer for an approximate duration of 3 months each. The actual mitigation requirements will be determined in accordance with the procedures outlined in the *Crandon Project Surface Water Mitigation Plan* (Foth & Van Dyke, 1998).

II.B.5,6 Type of Wastewater, Discharge Flow Rates: Outfall No. 015, Skunk Lake

The volume of mitigation water will be based on the need for mitigation. The practical worst case flow is projected to be 50 gpm. The average flow is projected to be 31 gpm. Actual site conditions will be monitored and actual discharge flows will be adjusted accordingly.

II.B.5,6 Type of Wastewater, Discharge Flow Rates: Outfall No. 016, Little Sand Lake

The volume of mitigation water will be based on the need for mitigation. The practical worst case flow is projected to be 134 gpm. The average flow is projected to be 61 gpm. Actual site conditions will be monitored and actual discharge flows will be adjusted accordingly.

II.B.5,6 Type of Wastewater, Discharge Flow Rates: Outfall No. 017, Duck Lake

The volume of mitigation water will be based on the need for mitigation. The practical worst case flow is projected to be 8 gpm. The average flow is projected to be 4 gpm. Actual site conditions will be monitored and actual discharge flows will be adjusted accordingly.

II.B.8 Treatment System Description

The wastewater treatment system will be designed to produce treated effluents which will meet the effluent limitations for discharge to groundwater by way of a soil absorption system and effluent limitations for discharge to soft water mitigation sites. The wastewater treatment facilities will include a base treatment system and an advanced treatment system. The base treatment system will serve to substantially reduce the mass of contaminants present in the raw wastewater. The advanced treatment system will serve as a polishing step to further reduce the concentrations of contaminants in the base treatment system effluent to levels low enough to consistently meet effluent limitations. The advanced treatment system will also serve to remove those contaminants not removed by the base treatment system.

The base wastewater treatment system will include equipment, piping, instrumentation and controls for the following treatment processes:

- addition of lime for neutralization of low pH wastewaters and precipitation of dissolved metals as metal hydroxides;
- removal of metal precipitates and other suspended solids by settling, assisted by the addition of a polymer to aid in settling;
- first stage wastewater pH adjustment with acid as needed to enhance metal sulfide precipitation;
- addition of sodium sulfide for precipitation of dissolved metals remaining in the wastewater as metal sulfides; and
- removal of metal sulfide precipitates and other suspended solids in the wastewater by filtration, assisted by the addition of a polymer to aid in filtration.

The advanced wastewater treatment system will include equipment, piping, instrumentation and controls for the following treatment processes:

- reverse osmosis system to consistently reduce the concentrations of metals and other contaminants in the lime/sulfide treatment system effluent to levels meeting limitations for groundwater discharge;

- evaporator system for concentration and volume reduction of reject brine from reverse osmosis treatment system;

- air stripper system for removal of ammonia present in condensate from the evaporator system, as required, to meet effluent limitations for groundwater discharge;

- pH adjustment systems using acid and/or caustic, as required, to optimize performance of the reverse osmosis, evaporator, and air stripper systems; and

- final wastewater pH adjustment with acid and/or caustic, as required, to achieve the pH effluent limitations for groundwater or soft water mitigation discharges.

Reverse osmosis permeate and evaporator condensate will be pumped to the discharge lagoons and subsequently pumped to the soil absorption system for final discharge. When soft water body mitigation is required, reverse osmosis permeate and/or evaporator condensate will be pumped to the mitigation water storage tanks and subsequently pumped to the mitigation sites.

II.B.10 Sludge Disposal

The solids and the backwash from the solids contact clarifier will be placed in the project's tailings management area which is an engineered containment facility. The evaporator brine will be used as a water source to produce cemented mine backfill. The sludge from the sanitary wastewater treatment plant is anticipated to be disposed of through land application. However, an alternative management practice would include disposal at a licensed wastewater treatment facility.

II.B.11 Additives

The following chemicals will be used in the wastewater treatment system and the potable water system. For further information see the *Preliminary Engineering Report for Wastewater Treatment Facilities for the Crandon Project* (Foth and Van Dyke, 1995/1998):

- Lime (fed in the solids contact clarifier)
- Sodium Sulfide (fed in the sulfide reaction tanks)
- Sulfuric Acid (fed at various locations)
- Sodium Hydroxide (fed at various locations)
- Polymer (fed in the solids contact clarifier)
- Polymer (fed in the sulfide reaction tanks)
- Antiscalent (fed prior to the reverse osmosis system)

II.C Land Application Discharge, Wastewater Sources and Treatment Technologies

Per direction received from the Wisconsin Department of Natural Resources, the information provided in this section relates to the sludge to be generated from the on-site sanitary wastewater treatment facility. At this time it is anticipated that the sludge will be applied to agricultural land or disposed at a licensed wastewater treatment facility.

II.C.5 Application Frequency

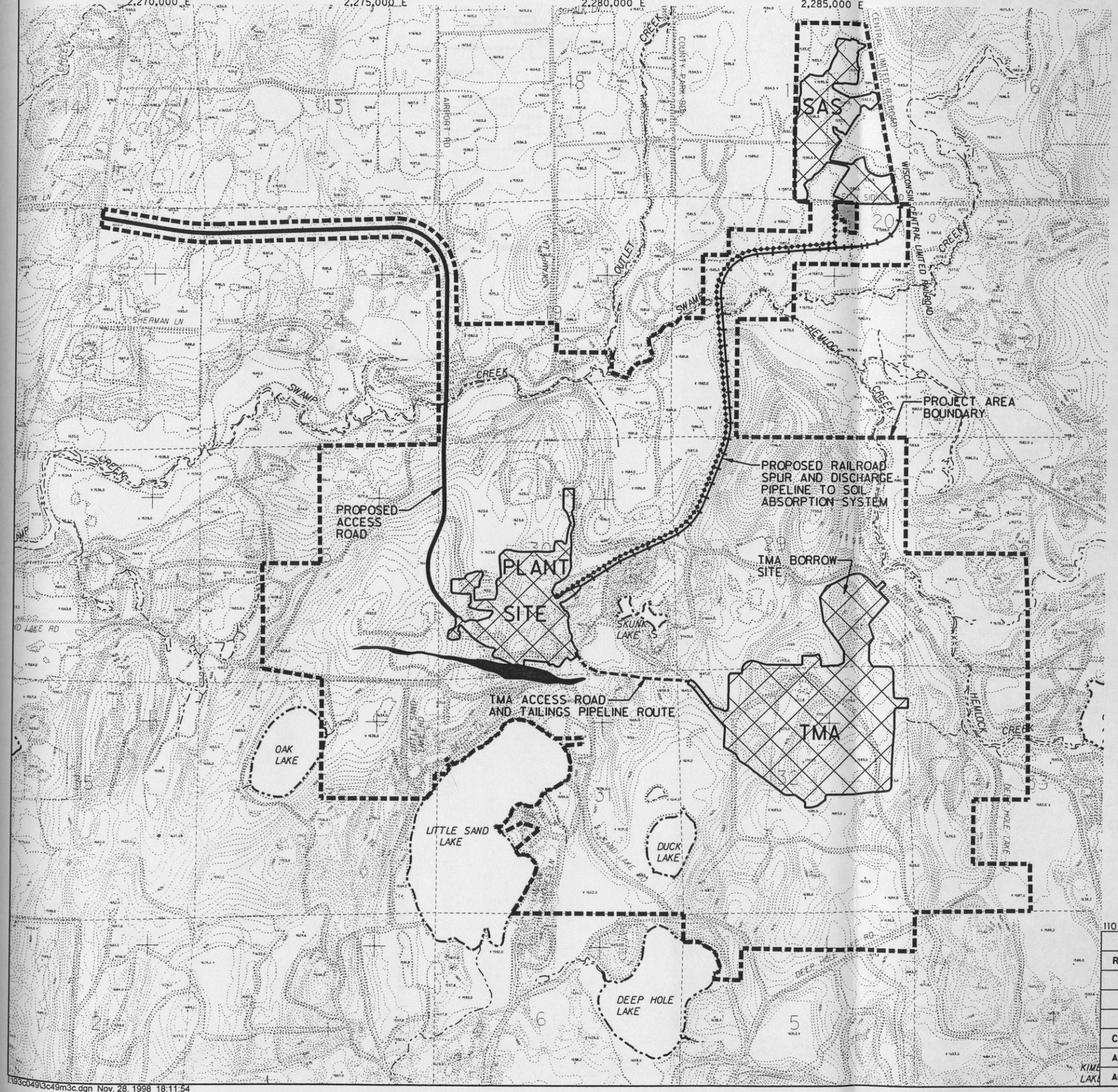
Application frequency will be established during final design, using best management practices.

II.C.6 Land Application Contact Person

The sanitary treatment sludge will be disposed at an as yet undetermined agricultural site or at a licensed wastewater treatment facility.

III.C Primary Industry Process Wastewater

Per direction received from the Wisconsin Department of Natural Resources, the information provided in this section contains estimated water quality for outfall 007 which is a discharge to groundwater via a soil absorption system.



N

LEGEND

- LAKES
- STREAMS
- EXISTING ROAD
- 1675 — EXISTING CONTOUR
- x 1692.0 — EXISTING SPOT ELEVATION
- SECTION LINE
- ORE BODY
- PROPOSED ACCESS ROAD
- PROPOSED TMA ACCESS ROAD AND TAILINGS PIPELINE ROUTE
- PROPOSED RAILROAD SPUR
- PROPOSED FACILITIES
- PROJECT AREA BOUNDARY
- PROPOSED SOIL ABSORPTION SYSTEM PIPELINE
- PROPERTY NOT INCLUDED WITHIN PROJECT AREA

NOTES:

1. TOPOGRAPHIC BASE MAP DIGITIZED FROM 1" = 1000' SCALE, 5' CONTOUR INTERVAL MAP PREPARED BY AERO-METRIC ENGINEERING, INC., SHEBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY APRIL 28, 1976.
2. HORIZONTAL DATUM BASED ON WISCONSIN STATE PLANE COORDINATE SYSTEM - NORTH ZONE.
3. VERTICAL DATUM BASED ON MEAN SEA LEVEL DATUM. CONTOUR INTERVAL IS 5 FEET.
4. SECTION LINES DIGITIZED FROM 7.5' SERIES USGS MAPS.
5. ORE BODY OUTLINE IS REPRESENTATIVE OF THE SUBCROP AT THE BASE OF THE OVERBURDEN.

Foth & Van Dyke

REVISED	DATE	BY	DESCRIPTION
1	11/98	MLD2	REVISED FOR 1998 UPDATE

CHECKED BY:	JKSI	DATE:	MAY '95
APPROVED BY:	PAE	DATE:	MAY '95
APPROVED BY:	GWS	DATE:	MAY '95

Nicolet Minerals COMPANY

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FIGURE 1

PROJECT AREA

Scale: 0 1200' 2400' | Date: MAY, 1995

Prepared By: Foth & Van Dyke | By: JRB2 | 93C049

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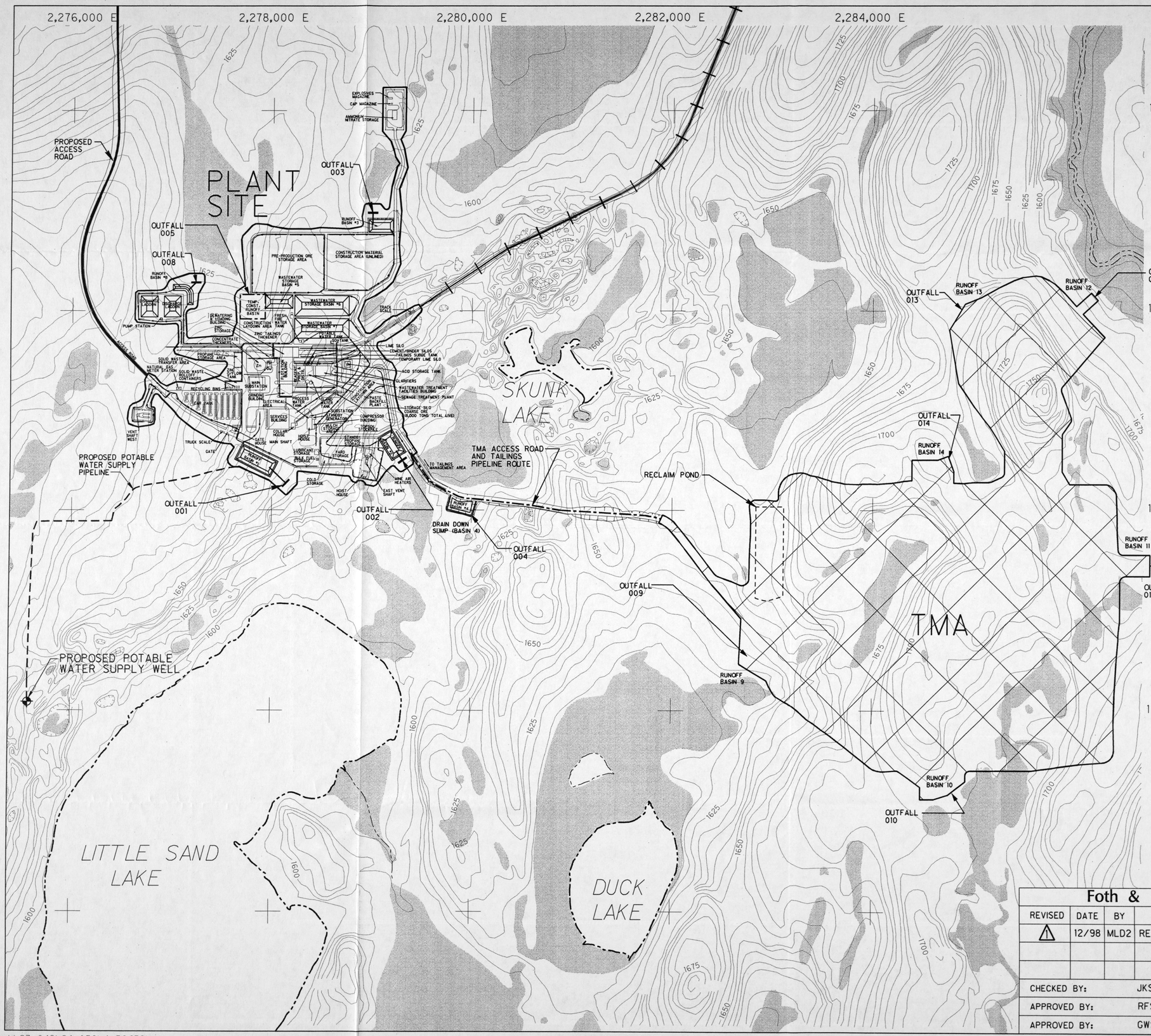

LEGEND

- 1600 — EXISTING CONTOUR
- RIVER/LAKE/WATERWAY
- PROPOSED LIMITS OF PLANT SITE DISTURBANCE
- PROPOSED STRUCTURE OR BUILDING
- PROPOSED RAILROAD SPUR
- EXISTING WETLAND

N

NOTES:

1. TOPOGRAPHIC BASE MAP DIGITIZED FROM 1" = 1000' SCALE, 5' CONTOUR INTERVAL MAP PREPARED BY AERO-METRIC ENGINEERING, INC., SHEBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY APRIL 28, 1976.
2. HORIZONTAL DATUM BASED ON WISCONSIN STATE PLANE COORDINATE SYSTEM - NORTH ZONE.
3. VERTICAL DATUM BASED ON MEAN SEA LEVEL DATUM. CONTOUR INTERVAL IS FIVE FEET.
4. FOLLOWING STARTUP OF WASTEWATER TREATMENT PLANT THE TEMPORARY CONSTRUCTION RUNOFF BASIN WILL BE RELOCATED AND CONVERTED TO A CONSTRUCTION LAYDOWN AREA.

TYPICAL REPRESENTATION: REFINEMENTS MAY BE MADE PRIOR TO CONSTRUCTION.

Foth & Van Dyke

REVISED	DATE	BY	DESCRIPTION
1	12/98	MLD2	REVISED FOR 1998 UPDATE

CHECKED BY:	JKS1	DATE:	AUG. '95
APPROVED BY:	RFS	DATE:	AUG. '95
APPROVED BY:	GWS	DATE:	AUG. '95

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FIGURE 2

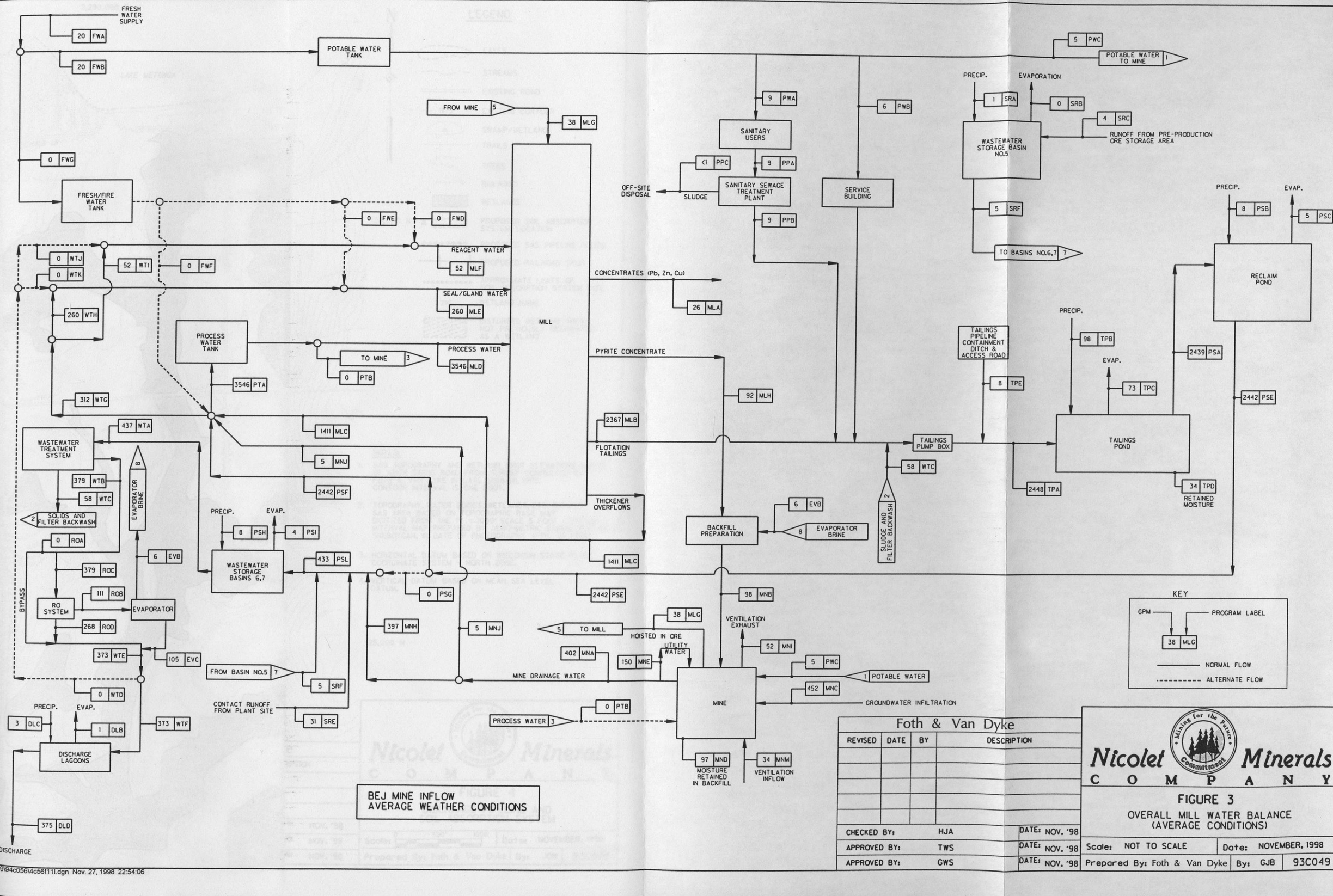
SITE LAYOUT

Scale: 0 500' 1000'

Date: AUGUST, 1995

Prepared By: Foth & Van Dyke | By: KMP | 93C049

I:\93c049\94c056\4c56f39b.dgn
03 DEC 98 jow



BEJ MINE INFLOW
AVERAGE WEATHER CONDITIONS

Foth & Van Dyke

REVISED	DATE	BY	DESCRIPTION

CHECKED BY:	HJA	DATE: NOV. '98
APPROVED BY:	TWS	DATE: NOV. '98
APPROVED BY:	GWS	DATE: NOV. '98

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FIGURE 3
OVERALL MILL WATER BALANCE
(AVERAGE CONDITIONS)

Scale: NOT TO SCALE	Date: NOVEMBER, 1998
Prepared By: Foth & Van Dyke	By: GJB 93C049

I:\93c049\94c056\4c56f11l.dgn Nov. 27, 1998 22:54:06

2,280,000 E

2,285,000 E

2,290,000 E

LAKE METONGA

SCHALK LN

MOHR LN

COUNTY PARK RD

BUTLER CREEK

APPROXIMATE LIMITS OF SOIL ABSORPTION SYSTEM SITE

OUTFALL 007 CONSISTS OF SAS CELLS A THROUGH F

CREEK TY-13

SWAMP CREEK

Z16 (NORTH)

Z16 (CENTRAL)

Z16 (SOUTH)

T4

A

B

C

D

E

F

EXCAVATED DITCH

LAKE J7-16

KEITH SIDING RD

PROPOSED RAILROAD SPUR

PROPOSED PIPELINE ROUTE

HEMLOCK CREEK

WISCONSIN CENTRAL LIMITED RAILROAD

130,000 N

125,000 N

LEGEND

- LAKES
- STREAMS
- EXISTING ROAD
- 1675 EXISTING CONTOUR
- SWAMP/WETLAND
- TRAILS
- TREES
- RAILROAD
- WETLANDS
- A PROPOSED SOIL ABSORPTION SYSTEM LOCATION
- PROPOSED SAS PIPELINE ROUTE
- PROPOSED RAILROAD SPUR
- APPROXIMATE LIMITS OF SOIL ABSORPTION SYSTEM SITE
- Z16 WETLAND NAME
- DISTURBED WETLAND AREA NOT PREVIOUSLY DELINEATED AS A WETLAND

NOTES:

1. SAS TOPOGRAPHY AND WETLAND SPOT ELEVATIONS NORTH OF KEITH SIDING ROAD FROM SURVEY COMPLETED BY FOTH & VAN DYKE IN LATE SUMMER, 1998. CONTOUR INTERVAL IS ONE FOOT.
2. TOPOGRAPHY, WATER BODIES, WETLANDS, ETC. OUTSIDE SAS AREA BASED ON TOPOGRAPHIC BASE MAP DIGITIZED FROM THE 1" = 1000' SCALE 5 FOOT CONTOUR INTERVAL MAP PREPARED BY AERO-METRIC ENGINEERING INC., SHEBOYGAN, WI. DATE OF PHOTOGRAPHY APRIL 28, 1976.
3. HORIZONTAL DATUM BASED ON WISCONSIN STATE PLANE COORDINATE SYSTEM - NORTH ZONE.
4. VERTICAL DATUM BASED ON MEAN SEA LEVEL DATUM.

Foth & Van Dyke

REVISED	DATE	BY	DESCRIPTION

CHECKED BY:	MDL2	DATE:	NOV. '98
APPROVED BY:	TWS	DATE:	NOV. '98
APPROVED BY:	GWS	DATE:	NOV. '98

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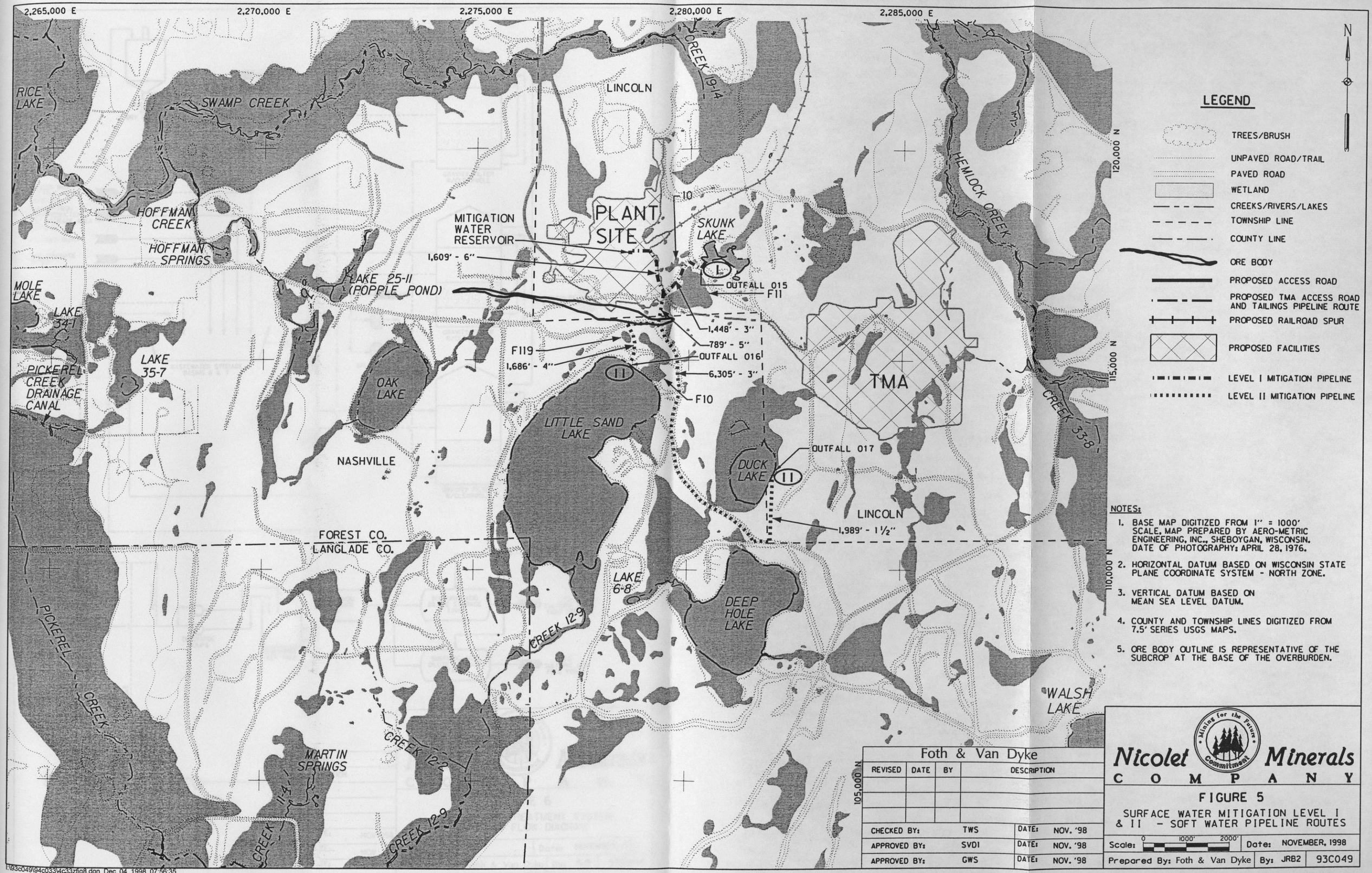
FIGURE 4

DISCHARGE PIPELINE AND SOIL ABSORPTION SYSTEM

Scale: 0 500' 1000'		Date:	NOVEMBER, 1998
Prepared By: Foth & Van Dyke		By: JOW	93C049

I:\93c049\94c033\4c33f264c.dgn Dec. 03, 1998 15:22:16



NOTES:

1. BASE MAP DIGITIZED FROM 1" = 1000' SCALE. MAP PREPARED BY AERO-METRIC ENGINEERING, INC., SHEBOYGAN, WISCONSIN. DATE OF PHOTOGRAPHY: APRIL 28, 1976.
2. HORIZONTAL DATUM BASED ON WISCONSIN STATE PLANE COORDINATE SYSTEM - NORTH ZONE.
3. VERTICAL DATUM BASED ON MEAN SEA LEVEL DATUM.
4. COUNTY AND TOWNSHIP LINES DIGITIZED FROM 7.5' SERIES USGS MAPS.
5. ORE BODY OUTLINE IS REPRESENTATIVE OF THE SUBCROP AT THE BASE OF THE OVERBURDEN.

Foth & Van Dyke

REVISED	DATE	BY	DESCRIPTION

CHECKED BY:	TWS	DATE:	NOV. '98
APPROVED BY:	SVDI	DATE:	NOV. '98
APPROVED BY:	GWS	DATE:	NOV. '98

Nicolet Minerals COMPANY

Mining for the Future • Commitment

FIGURE 5

SURFACE WATER MITIGATION LEVEL I & II - SOFT WATER PIPELINE ROUTES

Scale: 0 1000' 2000' | Date: NOVEMBER, 1998

Prepared By: Foth & Van Dyke | By: JRB2 | 93C049

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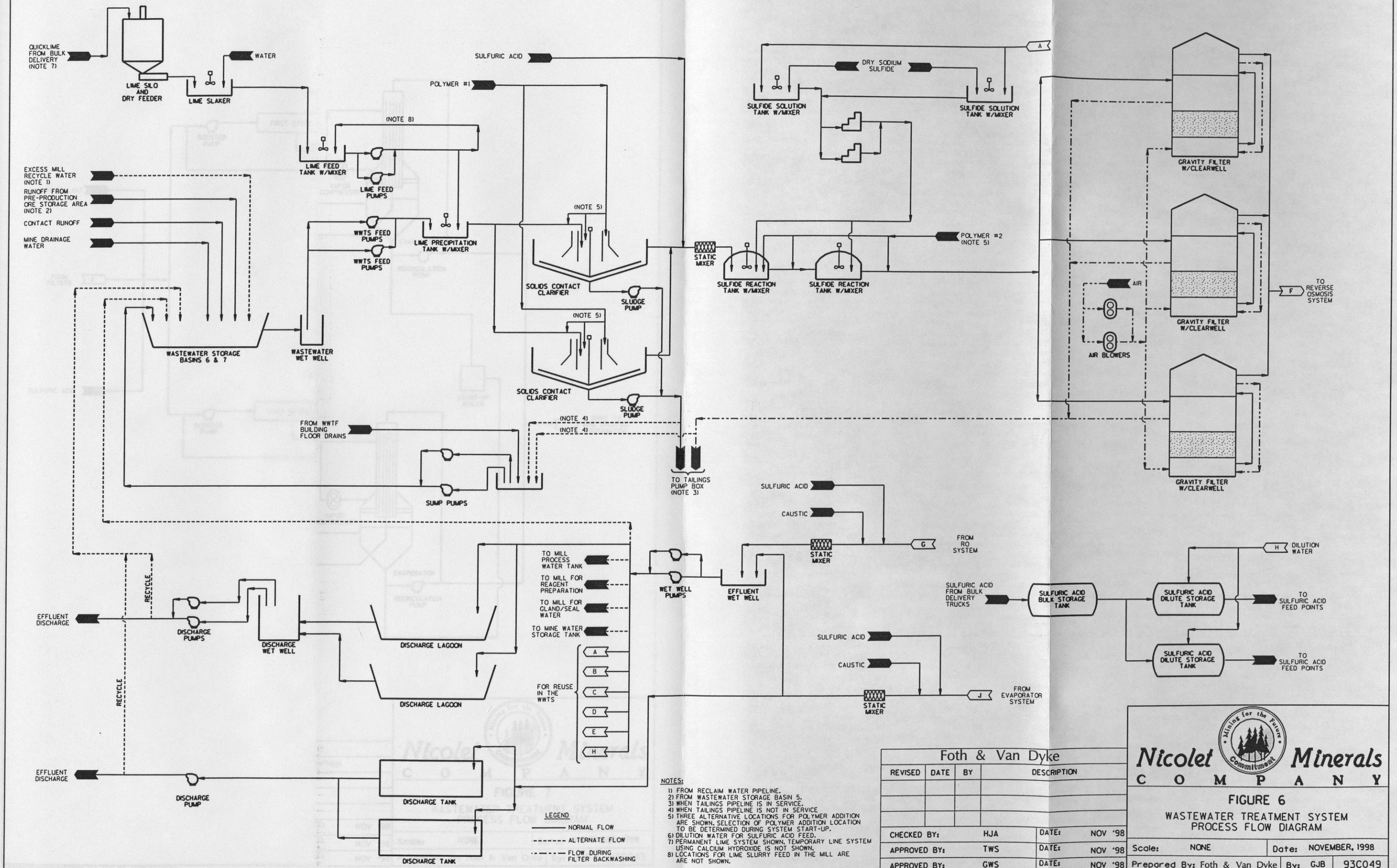


NOTES:

1) FROM RECLAIM WATER PIPELINE.
2) FROM WASTEWATER STORAGE BASIN 5.
3) WHEN TAILINGS PIPELINE IS IN SERVICE.
4) WHEN TAILINGS PIPELINE IS NOT IN SERVICE
5) THREE ALTERNATIVE LOCATIONS FOR POLYMER ADDITION ARE SHOWN. SELECTION OF POLYMER ADDITION LOCATION TO BE DETERMINED DURING SYSTEM START-UP.
6) DILUTION WATER FOR SULFURIC ACID FEED.
7) PERMANENT LIME SYSTEM SHOWN. TEMPORARY LINE SYSTEM USING CALCIUM HYDROXIDE IS NOT SHOWN.
8) LOCATIONS FOR LIME SLURRY FEED IN THE MILL ARE ARE NOT SHOWN.

LEGEND

——— NORMAL FLOW
- - - - - - ALTERNATE FLOW
·-·-·-·- FLOW DURING FILTER BACKWASHING

Foth & Van Dyke

REVISED	DATE	BY	DESCRIPTION

CHECKED BY:	HJA	DATE:	NOV '98
APPROVED BY:	TWS	DATE:	NOV '98
APPROVED BY:	GWS	DATE:	NOV '98

Nicolet Minerals COMPANY

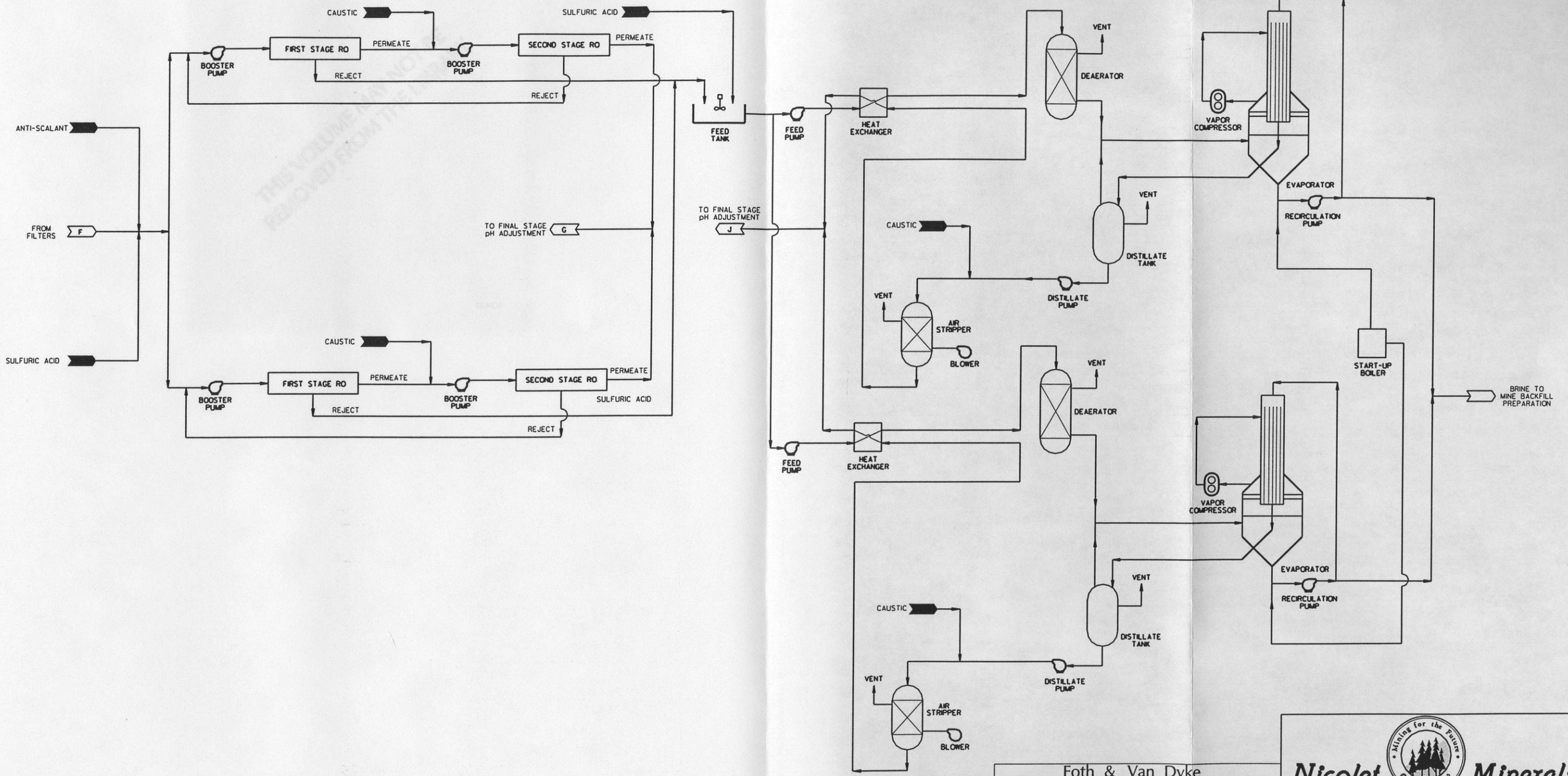
Mining for the Future • Commitment

FIGURE 6

WASTEWATER TREATMENT SYSTEM
PROCESS FLOW DIAGRAM

Scale: NONE		Date: NOVEMBER, 1998	
Prepared By: Foth & Van Dyke		By: GJB	93C049

I:\93c049\94c056\4c56f18b.dgn Nov. 27, 1998 22:58:36



Foth & Van Dyke			
REVISED	DATE	BY	DESCRIPTION

CHECKED BY:	HJA	DATE:	NOV '98
APPROVED BY:	TWS	DATE:	NOV '98
APPROVED BY:	GWS	DATE:	NOV '98

Nicolet Minerals COMPANY

Mining for the Future • Commitment •

FIGURE 7

WASTEWATER TREATMENT SYSTEM
PROCESS FLOW DIAGRAM

Scale: NONE		Date: NOVEMBER, 1998	
Prepared By: Foth & Van Dyke		By: GJB	93C049