Chapter 6
Industrial User Pretreatment Permits (IUPs)

Chapter 6
Industrial User Pretreatment Permits (IUPs)

Section A.   Quick Reference Information

1.   Definitions:

   • **IUP** Industrial User Pretreatment Permits (IUPs) are permits issued by the Control Authority to industries based on the allowable pollutant loadings determined by the Headworks Analysis (HWA). IUPs of primary concern to the Division are those issued to Significant Industrial Users (SIUs). The local program may choose to issue permits to industries or types of users (e.g.. restaurants, radiator shops) that do not fit the SIU definition.

   • **AT** The Allocation Table is a spreadsheet which summarizes all Industrial User Pretreatment Permit (IUPs) limits for each pollutant. All Significant Industrial User (SIU) permitted loadings are added together to get a total permitted industrial loading for each pollutant. The Total Permitted Loadings (TPL) are subtracted from the Maximum Allowable Industrial Loading (MAIL) determined with the Headworks Analysis (HWA). If the Total Permitted Loadings exceed the MAIL that pollutant is over allocated and the permit will not be approved.

   • **SIU** Significant Industrial User as defined by 15A NCAC 2H .0903

2.   Chapter Acronyms:

   • AT   Allocation Table
   • CIU   Categorical Industrial User
   • GWP   Ground water Permit
   • HWA   Headworks Analysis
   • IUPs   Industrial User Pretreatment Permits
   • POTW   Publicly Owned Treatment Works
   • SAR   Semi-Annual Report
   • SIU   Significant Industrial User...
   • SUO   Sewer Use Ordinance
   • WWTP   Wastewater Treatment Plant

3.   Purpose:

   Issuance and enforcement of permits is the primary mechanism for controlling industrial discharges to the POTW. Through the issuance and enforcement of permit limits, pass-through and interference may be prevented, beneficial use of sludge promoted, and POTW workers protected.

4.   Regulatory References:

   NCGS 143-215.1 (a)   NC Model SUO 4.1, 4.2
   NCGS 143-215.67 (a)   15A NCAC 2H .0916, .0917
   ⁃40 CFR 403.8.f.(1) (i), (iii)   15A NCAC 2H .0910
   40 CFR 403.6

Title: IUP Guide Section A
File name: IUP_Guide_SecA
Revision date: 9/1/93

Chapter 6
Section A
Page: 1

<u>Section A.   Quick Reference Information</u>

5.   DEM Requirements:

- Identify all Significant Industrial Users (SIUs).
- Identify all Categorical Industrial Users (CIUs).
- Draft Industrial User Pretreatment Permits (IUPs) which:

  A.) Control the discharge of appropriate Pollutants of Concern (POCs) for the SIUs
  B.) Monitor the discharge of Pollutants of Concern (POCs)
  C.) Do not result in over allocation
  D.) State the applicable civil and criminal penalties
  E.) Notify IUP permittee of the right to a hearing

- Submit the Draft IUPs, synopsis with attachments, and Allocation Table to the Division for comment and approval.
- Issue Division approved IUPs to all SIUs
- Prepare and maintain a current Allocation Table which includes the limits from all IUPs and the results from a Division approved Headworks Analysis (HWA) with no over allocations for any pollutants.

6.   Implementation frequency:

Issue permits that do not exceed 5 years in duration and expire on or before the approved Headworks Analysis (HWA) validation date.

7.   Appendices:

- Appendix 6-A,   IU Wastewater Survey and Application
- Appendix 6-B,   Generic Blank IUP
- Appendix 6-C,   Generic Blank Synopsis
- Appendix 6-D,   Sample Transmittal Letter
- Appendix 6-E,   Local Limits Procedure
- Appendix 6-F,   Combined Wastestream Formula Spreadsheet

8.   Other Guidance Documents:

- October 1992 Pretreatment Workshop Manual:
- EPA Guidance Manual for Electroplating and Metal Finishing Pretreatment Standards
- EPA Guidance Manual for Implementing Total Toxic Organics (TTO) Pretreatment Standards
- EPA Guidance Manual for the Use of Production-Based Pretreatment Standards and the Combined Waste Stream Formula
- EPA Industrial User Permitting Guidance Manual

Title: IUP Guide Section A
File name: IUP_Guide_SecA
Revision date: 9/1/93

Chapter 6
Section A
Page: 2

Chapter 6
Industrial User Pretreatment Permits (IUPs)

Section B.   How to Write and Issue IUPs

1.   Determine who needs an IUP:

   A.)   Complete or update your Industrial Waste Survey (IWS, see chapter 3)

   B.)   Have the Industry complete the IU Wastewater Survey & Application Form (see chapter 6, Appendix item 6-B)

2.   Determine if the Headworks Analysis (HWA) should be updated:

   See Chapter 5, Section D.

3.   Inspect the Industry

   Complete an Industrial User Inspection Form
   (see chapter 7, appendix 7-C)

4.   Determine what pollutants need to be Limited in IUPs:

   A.)   Look at the monitoring data and data summary form which should be attached to the IU Wastewater Survey & Application Form

   B.)   Look at the Wastewater Contents Checklist which is part of the IU Wastewater Survey & Application Form

   C.)   Look at the recent monitoring data, for industries that already have an IUP.

Now you should know what to expect and what is actually being discharged from each Industry. Examine and summarize the information to find the average and maximum flow and concentration values for each pollutant.

   D.)   Look at the Local Limits Procedure (Appendix 6-E) to determine if the expected or actual discharge from an Industry will need to be limited in their IUP.   (i.e., Is the pollutant loading >5% of the MAHL?)

   E.)   If an Industry is a 40 CFR Categorical Industrial User (CIU), they must have limits in their IUP for all pollutants listed in the applicable categorical regulation.

Title: IUP Guide Section B
File name: IUP_Guide_SecB
Revision date: 9/1/93

Chapter 6
Section B
Page: 1

5.   **Do additional pollutants need to be Monitored in IUPs:**

Look at the pollutants listed in your Long Term Monitoring Plan (LTMP) and your NPDES permit. It is recommended that you monitor every Industry once a year for all pollutants in your LTMP or NPDES permit.

However, if you have good recent data showing that a pollutant is not present at the facility and has not been detected in their discharge, this once a year monitoring may be replaced by monitoring once every 5 years when they reapply for a new IUP.

6.   **Determine what Limits to assign each pollutant**

A.)   Look at the information gathered and summarized in steps 4A. 4B, and 4C above.

B.)   Determine what Limits are needed by each Industry in order to be in compliance every time they are sampled. (i.e., What is the maximum value they have had in the last ten monitoring samples?) Try putting these limits in your Allocation Table and check for Over Allocations.

C.)   Over Allocations can NOT be permitted.

7.   **Solutions for Over Allocations:**

A.)   Lower the limits for the over allocated pollutants. Lower limits may need to be given to one, several, or all Industries.

B.)   Check the Headworks Analysis (HWA). The Maximum Allowable Industrial Loading (MAIL) may increase if you have newer data to support HWA calculations.

C.)   If your HWA is based on realistic assumptions and you must give an Industry an IUP Limit that they may have trouble meeting, put a compliance schedule in the IUP to allow them time to take actions necessary to comply with the IUP Limit. (see Section D, IUP Compliance Schedules)

8.   **Categorical Determination**

If the Industry has checked any of the Categorical processes or if you think they may be a categorical industry. Refer to the Categorical Regulations Summary (see Appendix 3-D) or call the pretreatment staff for assistance.

Title: IUP Guide Section B
File name: IUP_Guide_SecB
Revision date: 9/1/93

Chapter 6
Section B
Page: 2

8.   Writing the Permit

Many of you have IUPs that you have been using for years. Many of you have IUPs in your computer word processors. The State Pretreatment office has provided many model, sample, example IUPs over the years.

A Generic Blank Permit is provided in Appendix 6-B. It is recommended that permits follow this format, but it is not intended to make everyone change their IUPs.

However, specific information should be put in specific places of all IUPs. Most of this information is readily available, and if all IUPs have the same information in the same places where it can be easily found it will save time and prevent mistakes.

For example:

? Where would you look to find out if an Industry is a Categorical Industry and what the 40 CFR Number is?

? Where would you look to find out what WWTP and NPDES # receives the flow from an SIU?

? Where would you look to find out when and how many times the IUP had been modified?

? If 3 out of 4 of your SIU textile mills have a limit for zinc, Why does that one textile mill NOT have a limit for zinc.

Title: IUP Guide Section B
File name: IUP_Guide_SecB
Revision date: 9/1/93

Chapter 6
Section B
Page: 3

10.   OUTLINE FOR IUPs: (see Generic Blank Permit in Appendix 6-B)

A.) IUP "Basic 8":

This basic information should be included (and repeated !) on many pages of IUP and also included on all IU related correspondence.

1.   IU Name
2.   IUP Number
3.   Pipe Numbers
4.   40 CFR # if applicable, if not put N/A or none
5.   Receiving WWTP name
6.   WWTP NPDES #
7.   Effective date of IUP
8.   Expiration date of IUP

B.)   IUP Cover Page should include:

IUP Number, 40 CFR Number if applicable
IU name, street address, & mailing address if different
WWTP, NPDES Number, address
IUP Effective date, & Expiration date
POTW Official Signature, date signed

C.)   PART I,   Information should include:

Sec A.   The "Basic 8" Information again
Sec B.   IUP Modification History
Sec C.   Authorization Statements
Sec D.   Description of Discharge
Sec E.   Schematic with monitoring locations
Sec F.   Effluent Limits and Monitoring requirements. "Limits Page(s)"
Sec G.   Definitions and Limits Page notes

D.)   PART II,   General Conditions:

The general conditions should be copied and used verbatim in all IUPs.

E.)   PART III,   Special Conditions:

This section should be used carefully and only include items the POTW thinks are necessary for individual Industries based on inspections and knowledge of personnel and circumstances at the facility. Call the DEM pretreatment staff for assistance.

11.)   Synopsis which includes:

A.)   IU Wastewater Survey & Application Form
B.)   IU Inspection Form
C.)   Rationale for the Limits assigned to each pollutant

Title: IUP Guide Section B
File name: IUP_Guide_SecB
Revision date: 9/1/93

Chapter 6
Section B
Page: 4

Chapter 6
Industrial User Pretreatment Permits (IUP) Guidance

Section C.   Allocation Tables (AT)

1. **Definitions:**

   Allocation Tables (AT) are spreadsheets that summarize Industrial User Pretreatment Permit (IUP) limits for each pollutant. These total permitted loadings are compared with the MAHL and MAIL results calculated with the Headworks Analysis (HWA). POTWs are not allowed by DEM to issue IUPs with IUP limits that exceed the MAIL. This situation is called "Over Allocation".

2. **Section Acronyms:**

AT	Allocation Table
HWA	Headworks Analysis
IUP	Industrial User Pretreatment Permit
MAHL	Maximum Allowable Headworks Loading
MAIL	Maximum Allowable Industrial Loading

3. **Purpose of the AT:**

   A.)   Compare permitted loads to allowable loads to check for Over Allocations

   B.)   Provide a summary of the most important Pretreatment Program information.

4. **DEM Expectations:**

   A.)   To maintain and update as often as needed to keep current the Allocation Table in both the Local Control Authority's files and in the Divisions computer system.

   B.)   To submit a copy of the updated Allocation Table to the Division whenever a new or modified IUP is sent to the Division for approval. Changes in the Allocation Table should be highlighted and corrections or modifications noted in red.

Chapter name: IUP Guidance
File neme: AT_Guide._001
Revision date: 9/1/93

Chapter 6
Section C
Page 1

5. How to make and maintain your Allocation Table:

> The Allocation Table can be maintained by hand by using the blank Allocation Table found in Chapter 6, Section C of this manual.

> The Allocation Table can also be maintained with many computer spreadsheet programs. Disk copies of the blank Allocation Table are available in Excel format. Your POTW's current Allocation Table is maintained in the Division's computer system in Excel format and is available on disk from the Pretreatment staff.

A.) Information from IUPs that go into the Allocation Table:
   1.) List of all permitted SIUs, IUP # / pipe number
   2.) Category if Categorical (CIUs) or general type (i.e., textile, food, etc)
   3.) IUP original effective date, and expiration date
   4.) Flow, Conc. Limits, and Loading Limits for all SIUs. If IUPs have monthly average limits, they should be entered into the Allocation Table. If IUPs have only daily maximum limits, enter them into your Allocation Table.

B.) Information from the HWA that goes into the Allocation Table:
   5.) Maximum Allowable Headworks Loading (MAHL)
   5a.) Optional entry is the Basis for the MAHL (ie WQ Std, or Inhib)
   6.) Domestic Loading
   7.) Maximum Allowable Industrial Loading (MAIL)

C.) Information Calculated on the Allocation Table:
   8.) Permitted Loadings (lbs/day) are equal to the Flow in mgd times the Permitted Concentration in mg/l times 8.34.

   $$PLoad = Flow * PConc * 8.34$$

   9.) Total Permitted Loadings (lbs/day) are added up for each parameter

   10.) Total Allowable Loading Left (lbs/day) is equal to the MAIL minus the Total Permitted Loadings

   $$TALL = MAHL - TPL$$

   11.) Percent Total Loading still available is equal to the Total Allowable Loading Left divided by the MAHL

   12.) Percent Industrial Loading still available is equal to the Total Allowable Loading Left divided by the MAIL

Chapter name: IUP Guidance
File neme: AT_Guide._001
Revision date: 9/1/93

Chapter 6
Section C
Page 2

ALLOCATION TABLE

Town, WWTP name => _____

NPDES # => _____

Headworks last approved => ☐
Allocation Table updated => ☐

IUP Count	INDUSTRY NAMES (please list alphabetically)	Industry Permit/Pipe number	Category or Type of Industry	Original Effective Date	Date Permit Expires	FLOW Permit Limits		BOD Permit Limits		TSS Permit Limits		ALUMINUM Permit Limits		AMMONIA Permit Limits	
						MGD	gal/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
	Column Totals =>														

Insert lines
for more SIUs
if needed

Basis for MAHL =>

MAHL from HWA (lbs/day) =>
Domestic Loading (lbs/day) =>
Max. Allow Industrial Load(lbs/day) =>
Total Permitted to Industry (lbs/day) =>
Total Allowable Loading Left (lbs/day) =>
% Total loading still available (%) =>
% Industrial loading still available (%) =>

Basis for MAHL limit from HWA =>

Max Allowable Headworks Loading (MAHL) (lbs/day) =>
Actual Uncontrollable Loading from HWA (lbs/day) =>
MAIL = MAHL minus Domestic Loading (lbs/day) =>
Column totals from IUP limits listed above (lbs/day) =>
MAIL minus Total Permitted (lbs/day) =>
Allowable loading left / MAHL (%) =>
Allowable loading left / MAIL (%) =>

ALLOCATION TABLE

Town, WWTP name => _____

NPDES # => _____

IUP Count	INDUSTRY NAMES (please list alphabetically)	Industry Permit/Pipe number	ARSENIC Permit Limits		CADMIUM Permit Limits		CHROMIUM Permit Limits		COD Permit Limits		COPPER Permit Limits		CYANIDE Permit Limits	
			Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
	Column Totals =>													

Insert lines
for more SIUs
if needed

Basis for MAHL =>

MAHL from HWA (lbs/day) =>

Domestic Loading (lbs/day) =>

Max. Allow Industrial Load(lbs/day) =>

Total Permitted to Industry (lbs/day) =>

Total Allowable Loading Left (lbs/day) =>

% Total loading still available (%) =>

% Industrial loading still available (%) =>

ALLOCATION TABLE

Town, WWTP name => _____

NPDES # => _____

INDUSTRY NAMES (please list alphabetically)	Industry Permit/Pipe number	LEAD Permit Limits		MERCURY Permit Limits		NICKEL Permit Limits		Phenol Permit Limits		Phos. Permit Limits		SILVER Permit Limits	
		Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day
IUP Count													
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													

Insert lines for more SIUs if needed

Column Totals =>

Basis for MAHL =>

MAHL from HWA (lbs/day) =>

Domestic Loading (lbs/day) =>

Max. Allow Industrial Load(lbs/day) =>

Total Permitted to Industry (lbs/day) =>

Total Allowable Loading Left (lbs/day) =>

% Total loading still available (%) =>

% Industrial loading still available (%) =>

ALLOCATION TABLE

Town, WWTP name => _____

NPDES # => _____

INDUSTRY NAMES (please list alphabetically)	Industry Permit/Pipe number	ZINC Permit Limits		Other Permit Limits		Other Permit Limits		Other Permit Limits		Other Permit Limits		Other Permit Limits		Other Permit Limits	
		Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day

IUP Count

1													
2													
3													
4													
5													
6													
7													
8													
9													
10													

Column Totals =>

Insert lines
for more SIUs
if needed

Basis for MAHL =>

MAHL from HWA (lbs/day) =>
Domestic Loading (lbs/day) =>
Max. Allow Industrial Load(lbs/day) =>
Total Permitted to Industry (lbs/day) =>
Total Allowable Loading Left (lbs/day) =>
% Total loading still available (%) =>
% Industrial loading still available (%) =>

ALLOCATION TABLE

Town, WWTP name => _____

NPDES # => _____

IUP Count	INDUSTRY NAMES (please list alphabetically)	Industry Permit/Pipe number	Other Permit Limits		Other Permit Limits		Other Permit Limits		Other Permit Limits		Other Permit Limits		Other Permit Limits	
			Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day	Conc. mg/l	Load lbs/day
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														

Insert lines for more SIUs if needed   Column Totals =>

Basis for MAHL =>

MAHL from HWA (lbs/day) =>

Domestic Loading (lbs/day) =>

Max. Allow Industrial Load(lbs/day) =>

Total Permitted to Industry (lbs/day) =>

Total Allowable Loading Left (lbs/day) =>

% Total loading still available (%) =>

% Industrial loading still available (%) =>

Chapter 6
Industrial User Pretreatment Permits (IUPs)

Section D. IUP Compliance Schedules

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1. **When are Compliance Schedules in a permit a good idea?**

    A Compliance Schedule may be issued if an industry expects to have trouble meeting the limits in a new IUP. Also, consider issuing a Compliance Schedule to an industry that has been Significantly Non-Compliant (SNC) with their current Industrial User Pretreatment Permit (IUP).

2. **Compliance Schedules include:**

    A.)   Interim Limits Page(s)
    B.)   Final Limits Page
    C.)   List of Compliance Schedule Activities with due dates

3. **Limits Pages include the following:**

    Both the Interim and Final Limits pages look the same and work the same. They simply have different effective and expiration dates. All parameters with either limits or monitoring requirements must be on every limits page. The standard Generic Blank IUP Limits pages (see example in this section) may be used for almost all situations. It includes the following:

    A.)   Basic IUP Information

    B.)   Check boxes to distinguish whether the limits and monitoring requirements apply to:

    　　1.)   the entire permit period
    　　2.)   an interim period
    　　3.)   the final period of the IUP.

    C.)   Numerical Limits for regulated parameters

    　　1.)   Concentration or Mass based limits
    　　2.)   Daily or Monthly average limits

    D.)   Monitoring frequency requirements for all parameters of concern

    　　1.)   by Industry
    　　2.)   by POTW

    E.)   Sample Collection Method, for each parameter

    　　1.)   C = Composite
    　　2.)   G = Grab

    F.)   Laboratory Detection Level for each parameter
    　　optional but recommended

    G.)   Definitions and Limits Page(s) notes are included in the next section of the IUP, PART I, Section G (see Appendix 6-B).

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Chapter: IUP Guidance
File name: IUP_Guide_SecD
Revision Date: 9/1/93

Chapter 6
Section D
Page 1

4. **Interim Limits Page(s):**

The Interim Limits page should have the INTERIM LIMITS box checked or otherwise clearly noted on the limits page. IUPs with Compliance Schedules may have more than one interim limits pages. The effective and expiration dates of all limits pages must be coordinated with the Compliance Schedule Activity due dates and the dates on the other limits pages.

Interim limits for Categorical Industries may not exceed the Categorical Limits, unless this is a compliance schedule for a recently promulgated categorical regulation and the final compliance date in the regulation will not be violated. However, Interim limits for problem pollutants are set higher than the final limits, allowing the SIU to be in compliance while progress is being made toward achieving compliance with the lower, final limits for the problem pollutants.

5. **Final Limits Page:**

The Final Limits page should have the FINAL LIMITS box checked or otherwise clearly noted on the limits page. The effective and expiration dates of all IUP limits pages must be coordinated with the Compliance Schedule Activity due dates and the dates on the other limits pages. The expiration date of the Final Limits page must be the same as the final expiration date of the IUP.

6. **Compliance Schedule Activities:**

A.) Compliance Schedule Activities must have due dates for each item. The specific activities needed in the schedule will vary depending on the situation, the POTW, and the SIU.

B.) Communication with the SIU during the development of the compliance schedule is important to developing a realistic, achievable schedule.

C.) Dates can be amended if unforeseen, legitimate problems arise.

D.) Progress reports will help the POTW track progress towards final compliance.

Chapter: IUP Guidance
File name: IUP_Guide_SecD
Revision Date: 9/1/93

Chapter 6
Section D
Page 2

6.   Compliance Schedule Activities: (Continued)

        E.)   Compliance with the Final Limits should be scheduled several months following completion of construction or implementation of waste reduction activities to allow time for attaining routine operation.

        F.)   Insert the Compliance Schedule Activities into Part I of the Industrial User Pretreatment Permit (IUP).

7.   Example Compliance Schedule:

The example Pretreatment Compliance Schedule activities (on the next page) should NOT be used verbatim, it is ONLY a guide for drafting your own IUP compliance schedules. The municipality should consider specific local conditions at the POTW and the SIU.

Chapter: IUP Guidance
File name: IUP_Guide_SecD
Revision Date: 9/1/93

Chapter 6
Section D
Page   3

Chapter 6
Industrial User Pretreatment Permits (IUPs)

Section D. IUP Compliance Schedules

** Example Compliance Schedule. NOT to be used verbatim, Consider POTW and SIU specific details. **

The permittee shall achieve compliance with the Final Effluent Limitations specified in their Industrial User Pretreatment Permit (IUP) in accordance with the following schedule:

a. Submit a report on the sources, uses, and disposal of the parameters which have been identified for reduction by the Control Authority at the permittee's facility. Also, submit an engineering report of treatment alternatives (*or pollution prevention activities*) necessary for compliance with final effluent limits in this Industrial User Pretreatment Permit to the Control Authority on or before:

<div align="right">

_____

Enter due date here:
</div>

b. Submit plans, specifications, and schedule for selected pretreatment unit(s) or other treatment alternative(s) (*or an implementation plan of waste reduction activities*) to be conducted to the Control Authority on or before:

<div align="right">

_____

Enter due date here:
</div>

c. Submit a progress report on construction of selected pretreatment unit(s) or other treatment alternative(s) (*or pollution prevention implementation*) to the Control Authority on or before:

<div align="right">

_____

Enter due date here:
</div>

d. Complete construction of pretreatment unit(s) or other treatment alternative(s) (*or pollution prevention implementation activities*). Submit written confirmation of the completion of construction to the Control Authority on or before:

<div align="right">

_____

Enter due date here:
</div>

e. Evaluate start up and operation of pretreatment unit(s) or other treatment alternative(s) (*or effectiveness of pollution prevention activities*). Analyze discharge as specified on the Limits pages of Industrial User Pretreatment Permit (IUP), summarize monitoring results, report this information, along with a statement of the ability to achieve compliance, on or before:

<div align="right">

_____

Enter due date here:
</div>

f. Achieve compliance with all Final Limits in this Industrial User Pretreatment Permit (IUP). Submit written confirmation of compliance with these Final Limits to the Control Authority on or before:

<div align="right">

_____

Enter due date here:

(Final Due date less than 3 years, from issuance of compliance schedule)
</div>

Chapter: IUP Guidance
File name: IUP_Guide_SecD
Revision Date: 9/1/93

Chapter 6
Section D
Page 4

Chapter 6
Industrial User Pretreatment Permits (IUPs)

Appendix 6-D

Sample Transmittal Letter

**Include a similar letter from the POTW
to each Industry when you send them their IUP**

(enter current date)

SEND CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Name:
Title:
Company name:
Address:

Subject: Transmittal Letter for
             Industrial User Pretreatment Permit (IUP)

Dear Mr./Ms. _____

Your Industrial User Pretreatment Permit (IUP # _____) is enclosed. This permit is issued in response to your Industrial User Wastewater Survey and Application which was received by the POTW on _____ (date). This permit is issued pursuant to the requirements of North Carolina General Statute 143-215.1 and the local Sewer Use Ordinance.

Please read this permit carefully.

If any parts, measurement frequencies, or sampling requirements contained in this permit are unacceptable to you, you have the right to an adjudicatory hearing upon written request within thirty (30) days following receipt of this letter. Unless such demand is made, this decision shall be final and binding.

Sincerely,

_____
Official for the POTW
(Local Pretreatment Control Authority)

cc:

enclosure: IUP # _____

Chapter 6
Industrial User Pretreatment Permits (IUPs)

Appendix 6-E

Local Limits Procedure

North Carolina
Division of Environmental Management

Local Limits Procedure:
Criteria for Including Effluent Limits in Industrial User Permits

September 1, 1993

1.0 Purpose

The purpose of this procedure is three-fold:

1) to establish **minimum** requirements for setting local limits for pollutants of concern, (i.e., for establishing effluent limits and monitoring requirements in industrial user permits);

2) to fill a regulatory gap; and

3) to ensure consistent application of pretreatment regulations.

This procedure reflects the DEM philosophy that the pretreatment program is a problem-preventive approach to the management of wastewater treatment and to environmental and health protection. This procedure is also consistent with the general national trend toward more stringent development and implementation of local limits. As regulatory requirements are revised or additional information becomes available, this procedure will evolve to reflect those changes. Those local pretreatment programs who have established technically-based local limits will be best equipped to handle any future regulatory initiatives regarding local limits development, such as those proposed in the 1991 Report to Congress or in the current draft of the Senate Bill reauthorizing the Clean Water Act. **Local programs may choose to base decisions on including local limits and monitoring requirements in industrial user permits in a more stringent fashion than that outlined in this procedure.**

Those programs that have incorporated into their Sewer Use Ordinances the section regarding specific pollutant limitations from the model sewer use ordinance will find this procedure most applicable. The model sewer use ordinance is worded in order to allow for maximum flexibility in allocating allowable industrial pollutant loadings. That is, site-specific uncontrollable levels of pollutants of concern are established as limits unless otherwise limited in an industrial user permit. Those programs that have established uniform concentration limits may find that much of this procedure is not applicable to their particular situation.

Other Division policy and guidance documents address related local limits issues. For guidance on determining pollutants of concern (POCs), acceptable analytical methods, and the use of a safety factor in determining the maximum allowable headworks loading, the reader should refer to Division guidance on developing and implementing long term monitoring programs and conducting headworks analyses (HWAs) and to EPA's 1987 and 1991 guidance documents on developing local limits.

Chapter: IUP Guidance
Filename: Local Limits Procedure
Revision Date: September 1, 1993

Chapter 6
Appendix 6-E
Page 1

2.0 Background

For some time the pretreatment regulations have required the development of local limits. Various policy statements and guidance documents have discussed the implementation of this requirement. Except for brief references, however, EPA has established no clear guidance as to the specific conditions under which local limits must be established in industrial user permits. In recent years, the regulatory emphasis on the establishment of technically-based local limits has increased, and potential regulations may impose even more stringent requirements involving local limits development and permitting of industrial users.

2.1 Existing Regulations

The federal pretreatment regulations that became effective in August of 1990 require that POTWs developing a pretreatment program "develop and enforce specific limits to implement the prohibitions listed in [40 CFR 403.5] paragraphs (a)(1) and (b)," and that "each POTW with an approved pretreatment program shall continue to develop these limits as necessary and effectively enforce such limits" (40 CFR 403.5(c)(1)) [emphasis added]. The POTW pretreatment program development and implementation requirements found in 40 CFR 403.8(f)(1)(iii) state that:

> ". . . In the case of Industrial Users identified as significant under 40 CFR 403.3(t). this control shall be achieved through permits or equivalent individual control mechanisms issued to each such user. Such control mechanisms must be enforceable and contain, at a minimum, the following conditions: . . . (C) Effluent limits based on applicable general pretreatment standards in part 403 of this chapter, categorical pretreatment standards, local limits, and State and local law; (D) Self-monitoring. sampling, reporting, notification and recordkeeping requirements, . . . based on the applicable general pretreatment standards in part 403 of this chapter, categorical pretreatment standards, local limits, and State and local law." [emphasis added]

Furthermore, the federal regulations at 40 CFR 122(j)(4) require that all POTW's with approved pretreatment programs provide "a written technical evaluation of the need to revise local limits under 40 CFR 403.5(c)(1)." This requirement has been implemented in North Carolina in the form of the development of a headworks analysis based on the site-specific data obtained through a long-term monitoring program. The regulations do acknowledge, however, that local limits may not always be necessary. The POTW pretreatment program development and implementation requirements outlined in 40 CFR 403.8(f)(4) indicate that the POTW should develop local limits as required in 40 CFR 403.5(c)(1) or demonstrate that they are not necessary.

Chapter: IUP Guidance
Filename: Local Limits Procedure
Revision Date: September 1, 1993

Chapter 6
Appendix 6-E
Page 2

2.2 Existing Policy

In EPA's August 5, 1985 memo discussing local limits requirements, Rebecca Hanmer, then Director of the Office of Water Enforcement and Permits states:

"Some POTWs may find that loading levels of at least some of the pollutants of concern are far below the calculated maximum allowable headworks loadings. In these cases, the POTW should continue to monitor all industrial users discharging significant quantities of these pollutants. It may also be appropriate for the POTW to limit each significant industrial user to a maximum loading which cannot be exceeded without POTW approval. This process of limiting increases in discharges of pollutants of concern provides POTWs with a control mechanism without imposing unnecessarily stringent limits on industries which expand or change production processes. Industries approaching their limits could petition the POTW for an increased allowance. Upon receipt of such request, the POTW would update its headworks loading analysis to determine the effect of the proposed increase. The analysis would enable the POTW to make a sound technical decision on the request.

Because they are based on the specific requirements of the POTW, sound local limits can significantly enhance the enforceability of a POTW's local pretreatment program. A POTW that proposes to rely solely upon the application of the specific prohibitions listed in 403.5(b) and categorical pretreatment standards in lieu of numerical local limits should demonstrate in its program submission that (1) it has determined the capability of the treatment facility to accept the industrial pollutants of concern, (2) it has adequate resources and procedures for monitoring and enforcing compliance with these requirements, and (3) full compliance with the applicable categorical standards will meet the objectives of the pretreatment program."

In a July 16, 1987 memo R. Paul Wilms, then Director of the Division of Environmental Management, discussed the Division's policy on the establishment of BOD limits in pretreatment permits. The policy is discussed in more detail in Section 3.3.

In the March 22, 1988 memo transmitting the 1987 Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program, James Elder, then Director of the EPA Office of Water Enforcement and Permits, states a similar, though more conservative viewpoint, reflecting the general trend of establishing and enforcing local limits apparent in the federal pretreatment regulations:

"Occasionally, POTWs may find that loadings of some pollutants of concern are well below the calculated maximum headworks loadings. In these cases, limits may not be necessary to prevent actual exceedances. Nonetheless, EPA encourages POTWs to establish maximum limits for significant dischargers of such pollutants. This will ensure that current loadings cannot be substantially increased without the POTW's granting permission and having the opportunity to assess both increased loadings from other industrial sources as well as the need to provide for future industrial growth."

Chapter: IUP Guidance
Filename: Local Limits Procedure
Revision Date: September 1, 1993

Chapter 6
Appendix 6-E
Page   3

2.3 Existing Guidance

EPA developed extensive technical guidance on the subject of local limits in 1987 (Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program). The 1991 EPA Supplemental Manual on the Development and Implementation of Local Discharge Limitations under the Pretreatment Program provides supplemental guidance on the implementation of local limits to aid in the interpretatic site-specific data and its use in a headworks analysis. Additionally, EPA developed the computer program PRELIM to aid in the development of technically based local limits. Although the EPA guidance addresses the determination of POCs and provides options for pollutant loading allocation methods, it does not address the issue of including local limit srial user permits. DEM is aware of no formal guidance established by other states addressing this issue.

2.4 Potential Regulations

EPA's 1991 Report to Congress on the National Pretreatment Program presents five regulatory alternatives as proposals for potential improvements to the existing National Pretreatment Program:

    1) enhance national pretreatment standards;

    2) improve/restrict site-specific toxic discharge standards;

    3) enhance environmental controls on POTWs;

    4) expand pretreatment monitoring requirements; and

    5) shift administrative responsibilities in the national pretreatment program.

Alternative 2 would establish mandatory local limits development requirements and mandate that local limits be developed to meet all applicable environmental criteria. Under alternative 3 environmental criteria for all POTW receiving media (receiving water, air, sludge, and sediment) would be promulgated and a requirement for the inclusion of toxic limits in permits for all pretreatment POTWs, covering all wastestreams (air, water, sludge) would be instituted.

Proposals contained in the current draft of Senate Bill 1081 (the Clean Water Act reauthorization) include requiring control authorities to set local limits for each non-categorical industrial user, requiring monthly reporting for significant industrial users and quarterly reporting for other industrial users, and prohibiting the discharge of any hazardous pollutant by an industrial user unless the pollutant and the source are subject to a categorical pretreatment standard, on a 304(m) schedule for a standard, or subject to a local limit that is at least as stringent as RCRA technology-based limits.

Clearly, as the 1990 revisions to the federal pretreatment regulations, the 1991 Report to Congress, and the current drafts of the Senate Bill reauthorizing the Clean Water Act indicate, the trend toward more stringent control of indirect discharges of pollutants through local limits development is likely to continue.

Chapter: IUP Guidance
Filename: Local Limits Procedure
Revision Date: September 1, 1993

Chapter 6
Appendix 6-E
Page 4

3.0 Local Limits Minimum Requirements

This procedure establishes two sets of criteria for setting industrial user permit limits: 1) local limits based on pass-through, inhibition, and sludge disposal and 2) local limits based on worker safety and health and system physical integrity. These criteria apply to all Pollutants of Concern (POCs). In the case of a pollutant of concern for which no environmental or inhibition criteria are available and for which their is a potential or actual pass-through or interference problem, POTWs should require IUs to participate in investigative measures to determine a means of limiting the POC. The criteria should be utilized when issuing new IUPs and when reissuing existing IUPs, unless a POTW elects to use more stringent criteria. It is recommended that when local limits are not required by the criteria outlined in this procedure, technology-based or historically-based limits should be established. This will ensure continued operation and maintenance of pretreatment units and provide additional control of pollutant load.

3.1 Local Limits Based on Pass-through, Inhibition, and Sludge Disposal

In general, the requirements for setting industrial user-specific limits to protect against pass-through and inhibition and to ensure beneficial use of sludge are based on several criteria. These criteria include the magnitude of the industrial load for a particular pollutant and available treatment capacity. Evaluations of the need for establishment of local limits in industrial user pretreatment permits should be conducted at permit issuance, modification, and reissuance.

Specifically, an industrial user-specific limit is required:

- for process flow, if the industrial user discharges on average process flow greater than 25,000 gallons per day or greater than or equal to 5% of the wastewater treatment plant design flow, unless the wastewater treatment plant has significant available capacity. Significant capacity for flow is considered available if more than 50% of the design flow is available.

- for all pollutants except BOD, if the industrial user discharges on average a pollutant loading greater than or equal to 5% of the wastewater treatment plant maximum allowable headworks loading, unless the wastewater treatment plant has significant available capacity. Significant capacity for pollutants is considered available if more than 50% of the allowable load is available.

- for BOD, if the industrial user discharges on average a pollutant loading greater than or equal to 5% of the POTW treatment capacity (maximum allowable headworks loading), unless significant treatment capacity is available. Significant treatment capacity is considered available if more than 50% of the allowable load is available. For the cases where the industrial discharger is above 5% of the POTW treatment capacity and the POTW has significant treatment capacity available a BOD reopener clause is required in the permit. This reopener must state that when influent monitoring at the POTW indicates that the POTW has reached 75 percent of its treatment capacity the permit will be reopened in order to impose a BOD limitation. This policy is discussed in more detail in section 3.3.

Chapter: IUP Guidance
Filename: Local Limits Procedure
Revision Date: September 1, 1993

Chapter 6
Appendix 6-E
Page 5

Appendix 6-E. NCDEM Local Limits Procedure

In determining treatment capacity, the most recent DEM approved headworks analysis should be used. For determining available treatment capacity, the 12 month average influent concentration and flow should be used. Influent concentrations below the detection level should be evaluated at one-half (1/2) the detection level.

3.2 Local Limits Based on Worker Safety and Health and System Physical Integrity

In general, limits to protect worker safety and health and the physical integrity of the collection and treatment system are based on fume toxicity and/or explosivity. For these possible effects and the basis of their evaluation, chemical concentrations, rather than mass loadings, must be considered. For both explosivity and fume toxicity, the data for organic chemicals available in the 1987 EPA local limits guidance, in conjunction with data from an EPA study of 40 POTWs identifying and quantifying the most frequently detected organic compounds in WWTP influent, were used to establish some basic rules of thumb in evaluating the need for local limits. As more data becomes available on additional compounds, these rules of thumb may need to be modified. The reader should refer to EPA's Guidance to Protect POTW Workers from Toxic and Reactive Gases and Vapors published in June 1992 for further guidance.

For explosivity, an industrial user-specific limit is not required:

1) if the maximum concentration of any individual organic compound is less than 5 mg/L at the point where the connection to the POTW collection system is made; or

2) if the total of the maximum concentrations of a mixture of organics is less than 5 mg/l at the point where the connection to the POTW collection system is made.

If concentrations exceed these levels, then monitoring of some kind to establish a database upon which to base a permit limit should be incorporated into the industrial user permit. The closed-cup flashpoint test or some measure of explosivity (as with an explosimeter) may be incorporated into the industrial user permit in lieu of chemical-specific monitoring. If chemical-specific permit limits are established, it is recommended that they be daily maximum values.

For fume toxicity, an industrial user-specific limit is not required: if the average concentration of any individual organic compound is less than 0.1 mg/l.

If concentrations exceed this level, then the data should be examined for each chemical specifically as outlined in the 1987 EPA Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program (pages 4-13 through 4-27) to determine if a limit is needed, with two exceptions. DEM recommends that OSHA Short Term Exposure Limits (STELs), rather than Threshold Limit Value-Time Weighted Averages (TLV-TWAs), be used. STELs may be found in Table Z-1-A of Subpart Z of the North Carolina Occupational Safety and Health Standards for General Industry (corresponding to 29 CFR 1910.1000) or in the HWA Chapter Appendix 5-B. DEM also recommends that only the procedure for individual chemicals be utilized from the

Chapter: IUP Guidance
Filename: Local Limits Procedure
Revision Date: September 1, 1993

Chapter 6
Appendix 6-E
Page   6

EPA 1987 local limits guidance, and not the procedure for developing limits for mixtures of chemicals.

In lieu of chemical-specific limits, the POTW may demonstrate that its worker safety and health plan provides for procedures that will protect workers from fume toxicity and that chemical-specific limits are unnecessary.

3.3 BOD

In a July 16, 1987 memo R. Paul Wilms, then Director of the Division of Environmental Management, discussed the Division's policy on the establishment of BOD limits in pretreatment permits. The policy will continue to be implemented with the following clarification. To be consistent with the review of headworks analysis review procedures, the phrase design BOD load is interpreted to mean the DEM approved maximum allowable headworks loading for BOD. For the reader's convenience, the policy is reiterated here.

> " . . . Therefore, POTWs should include technically based upper BOD limits in each pretreatment permit as a protection for both their industries and their enforcement authorities.
>
> As part of the Division's review of pretreatment permits, BOD limitations and allocations will be checked. Objections should be registered if the BOD load allocated to industrial users, when added to the BOD load of the existing nonindustrial users, exceeds the design BOD load for the wastewater treatment plant (WWTP) or when no upper BOD limits are applied to the industries. In cases where a WWTP is extremely underloaded (50% of the design BOD load or less) and needs the organic load, pretreatment permits may be issued with a BOD reopener clause in lieu of an upper BOD limit. This reopener must state that when influent monitoring at the WWTP indicates that the WWTP has reached 75 percent of the design BOD load the pretreatment permit will be reopened in order to impose a BOD limitation."

3.4 Non-Regulatory Industrial Allocations

Some POTWs have historically used allocations, as opposed to or in combination with effluent limits, as a tracking mechanism for industrial pollutant loadings. These allocations have not typically had the enforcement implications of pretreatment standards, or permit limits. If permit limits are not required as outlined in this policy for particular POCs and allocations are used as a control mechanism for those POCs, they should be clearly distinguished in permits from pretreatment permit limits. If allocations are not to be enforced in the same manner as permit limits, this should be clearly indicated in the permit and the enforcement response plan. Pretreatment permit limits must be enforced according to federal, state, and local regulations.

Chapter: IUP Guidance
Filename: Local Limits Procedure
Revision Date: September 1, 1993

Chapter 6
Appendix 6-E
Page 7

Chapter 6
Industrial User Pretreatment Permits (IUPs)

Appendix 6-F

Combined Wastestream Formula
(CWF) Spreadsheet

Combined Wastestream Formula (CWF) Spreadsheet
Simple Case, Only one regulated process flow

Variables	Values	Units
Regulated Process Flow =		gpd
Other, "Dilution" Flow =		gpd
Total Flow =		gpd
CWF Ratio =		ratio

List All Applicable Categorical Limited Parameters	Listed Categorical Daily Maximum Limit mg/l	CWF Adjusted Daily Maximum Limit mg/l	Listed Categorical Monthly Average Limit mg/l	CWF Adjusted Monthly Average Limit mg/l
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
etc.				

DIRECTIONS:

1. **Get flow data from SIUs**

2. **Calculate CWF RATIO**

   Combined Wastestream Formula Ratio

   = (Total Flow - Dilution Flow) / Total Flow

3. **Enter the applicable Categotrical Parameters and Limits.**

4. **Calculate CWF Adjusted Limits Multiply the Listed Categorical Limits by the CWF Ratio.**

   Combined Wastestream Formula Adjusted Limits

   = Listed Categorical Limits * CWF Ratio

5. **The Limits used in the IUP:**
   * Can not exceed CWF adjusted Limits.
   * Can not be less than Detection Levels.
   * Can not cause Over Allocation.

Title: CWFSpreadsheet
File name: IUP_CWF_Spreadsheet
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