PT 101

An Intro to Pretreatment
Today's Presentation

- History of Pretreatment
- Goals of Pretreatment Program
- Pretreatment in North Carolina
- The Program
  - Major program elements
  - Files
  - Inspections / Guidance / Training
  - Summary and Contacts
- PT Jeopardy!
History of the Pretreatment Program

• 1972 Clean Water Act
• 1978- Federal Pretreatment regulations established
• 1982- EPA approval of the NC Program
• 1983/84 - majority of NC POTW Pretreatment Programs approved
• 1987-90 - major revision to NC and Federal pretreatment regulations
• 2005 – Streamlining of the Pretreatment Program
• 2011 – Revision to NC pretreatment regulations and model SUO
Pretreatment

The Federal and State Pretreatment Program gives regulatory authority for EPA, states, and municipal governments to control the discharge of industrial wastewater into municipal Wastewater Treatment Plants (WWTPs) or Publicly Owned Treatment Works (POTWs). The objectives of the Pretreatment Program are to prevent pass-through, interference, or other adverse impacts to the POTW, its workers or the environment; to promote the beneficial reuse of biosolids; and to assure that all categorical pretreatment standards are met. There are approximately 620 Significant Industrial Users (SIUs) who discharge industrial wastewater to more than 130 POTWs throughout the State of North Carolina.

The Pretreatment, Emergency Response and Collection Systems (PERCS) pretreatment staff periodically present the following workshops as a service to assist POTWs and their consultants.

- Pretreatment Annual Report Workshops
- Headworks Analysis Workshops
- Permit Writing Workshops

See the [Training Page](#) for details, including links to EPA training opportunities.

Sewer Use Ordinance (SUO)

This Model SUO includes many revisions to address the 2011 revisions to NCAC 15A 02H .0900 - Local Pretreatment Programs.
What’s the Purpose of the Pretreatment Program?

- Prevent Pass Through
- Prevent Interference
- Promote the beneficial use of biosolids
- Protect Worker Health and Safety
Cuyahoga River Cleveland 1960s
Cuyahoga River Cleveland 1960s
Cuyahoga 1969
Louisville, KY February 1981
Northern Russia 2016
Northern China 2011
CNN Report on China
March 2013
Develop and Implement the “Right” Pretreatment Program

Creating a Pretreatment Program that:

◦ Protects the POTW
◦ Is Environmentally sound
◦ Is Technically feasible
◦ Is Judicially defensible

There is a delicate balance between these goals and protecting the POTW!
TYPICALVILLE

Commercial

Industries

Influent

WWTP
- Aeration Basin
- Digester

Residential

Farm Land

River
Pretreatment Regulations

- Federal Clean Water Act
- Federal General Pretreatment Regulations - 40 CFR 403
- NC General Statutes
- State Administrative Code - 15A NCAC 2H .0900
Got Pretreatment?

- Publicly Owned Treatment Works (POTWs) required to have a Pretreatment Program if process wastewater from Significant Industrial User (SIU) is accepted
  - POTW = city, town, county, Sanitary District, Sewer Authority
Got Pretreatment?

- What is a SIU?

- To understand this, first learn -
  - What is an IU?
  - What is a Pretreatment Program supposed to do?
What’s an IU?

- **User**
  - “Person” that discharges wastewater into the collection system

- **Industrial User (IU).**
  - broadly intended to cover any User of the collection system (and wastewater treatment plant) that is not a house
What is a Significant Industrial User (SIU)?

- An IU with the potential to cause
  - Pass Through (NPDES problems)
  - Interference (collection system problems and inhibition)
  - Bad biosolids
  - Poor Worker Health and Safety
What is a SIU?

- SIU
  - >25,000 gpd
  - >5% MAHL for BOD, TSS, NH3
  - CIU
  - Reasonable Potential
What’s a CIU?

- CIU = Categorical Industrial User
- A subset of SIUs (all CIUs are SIUs with the exception of NSCIUs)
- A SIU that is covered by a specific Federal Categorical Regulation, for example:
  - metal finisher
  - pharmaceutical
What’s a non-SIU?

• IU that is not a SIU
• may or may not be issued a local IUP or other individual control mechanism
Pretreatment Program in NC

604 Active SIUs

- Metals: 24%
- Textile: 12%
- Food Processors: 11%
- Laundries: 10%
- Pharmaceuticals: 6%
- OCPSF: 3%
- Other: 34%
Pretreatment Program in North Carolina

- 113 Active Pretreatment Programs
- Over 200 local POTW Pretreatment Coordinators and consultants
- DWR/DEQ
  - Pretreatment, Emergency Response, and Collection Systems Unit (PERCS)
  - Regional Staff
Division Responsibility

• DWR is Approval Authority
  ◦ Delegate DWR’s responsibilities for Industrial Users under General Statutes to POTW.
  ◦ Approve POTW’s Pretreatment Program, including review of each element and IUP.
  ◦ Compliance judgment and enforcement for failure to implement Pretreatment Program
  ◦ Training and Support!
POTW Responsibility

- POTW is Control Authority
  - POTW is permittee of Approval Authority (DWR)
  - Develop and Implement DWR approved Pretreatment Program
  - Control Industrial Users through IUP and SUO
  - Perform compliance judgment and take enforcement against IUs for failure to comply with IUP and SUO
SIU Responsibility

- SIU is Permittee of POTW
  - “Controlled” by POTW
  - Comply with SUO and IUP
  - Keep POTW informed of SIU operations, including notification of changes before they make the change.
POTW’s Role compared to DWR

- LTMP/STMP HWA
- SUO
- PAR to DWR
- Ambient Monitoring
- NCGS
- QNCR to EPA

Permits, Compliance, Enforcement, Inspections
Full Program versus Modified Program

- **Modified Program - 33 Programs**
  - POTW combined permitted flow of 2 MGD or less AND have 3 or less SIUs
  - Short Term Monitoring Plan (once per 5 years)
  - Submit slightly smaller PAR

- **Full Program - 80 Programs**
  - Long Term Monitoring Plan (on-going)
  - Full PAR Required
Major Program Elements

- Sewer Use Ordinance (SUO)
- Monitoring Plan (LTMP/STMP)
- Headworks Analysis (HWA)
- Permits (IUP)
- Industrial Waste Survey (IWS)
- Allocation Table (AT)
- Sampling, Inspections
- Enforcement Response (ERP)
- Pretreatment Annual Report (PAR)
Sewer Use Ordinance (SUO)

- Adopted by the POTW’s governing board
- Prohibited discharges
- Gives the POTW the authority to Control Users:
  - Deny or Halt discharge
  - Establish Local Limits
  - Issue permits
  - Enforce permits
  - Issue penalties
What is a SIU Permit (IUP)?

IUP = Industrial User Pretreatment Permit

- Like DWR permits, IUPs are issued under NCGS 143-215.1
  - Purpose is to protect POTW and environment.
  - Same format as NPDES permits: Include limits, monitoring, reporting, general and specific conditions.
Pretreatment Permits versus Pretreatment Equipment

- SIU definition not tied to whether Industrial User (IU) has treatment units
  - Not all SIUs have pretreatment equipment, but all SIUs have pretreatment permits (IUPs)
  - Not all IUs (Industrial Users) are SIUs
  - Not all IUs with pretreatment equipment are SIUs
  - non-SIUs can be issued non-SIU (or local) IUPs
Industrial Waste Survey (IWS)

- Survey all industries connected to POTW
  - Satellite communities – who tells who?
- Determine who needs “controlling” or regulating (who is a SIU)
- Do you know when someone new is planning to move to town?
  - Or only find out after already here?!
- Do you know when an IU or SIU makes a change to their process?
  - Or only find out after already made it?!
SIUs vs. IUs?

GEORGIA

CHEMOL CO.

CHEMOL CO., Div. of Seydel-Woolsey Co. 2300 Randolph Ave., #4740 Phone—(404) 333-3050 Mail addr: P.O. Box 10282, Greensboro, NC 27419

Consumer—National

(SIC—5061) Ready-mixed concrete

Employes—2; Estab.—1966

Sales—$48,000,000

Distrib.—Local

Privately owned corporation

See Parent Co. for full profile.

GREENSBORO—(cont.)

Sales Assoc.—Chris Wood

SIC—3917)

Consumer—National

Employes—30; Estab.—1967

Sales—$50,000,000

Distrib.—Local

Privately owned corporation

Also see: 300 S. Swing Rd. loc. Parent co.—Chandler Concrete Co., Inc., Burlington, NC

Phone—(336) 226-1181

See Parent Co. Section for full profile.

CHANDLER CONCRETE CO., INC. 300 S. Swing Rd. (7209) Mail addr: P.O. Box 131, Burlington, NC 27216

Phone—(336) 294-3488 Fax—(336) 285-9703 www.chandlerconcrete.com

Email—sales@chandlerconcrete.com

Pit. Mgr.—Robert Singh SIC—3917) Ready-mixed concrete

Employes—8; Estab.—1997

Sales—$20,000,000

Distrib.—National

Privately owned corporation

Also see: 1424 Mill St. loc. Parent co.—Chandler Concrete Co., Inc., Burlington, NC

Phone—(336) 226-1181

See Parent Co. Section for full profile.

CHANDLER CONCRETE, INC. 2727 Immansuel Rd. (7209-2598) Phone—(336) 135-1872 Fax—(336) 656-1358

SIC—3914)

National—(800) 621-3694

Employes—2; Estab.—1977

Sales—$100,000

Distrib.—National

Privately owned corporation

See Parent Co. Section for full profile.

CHASE LOGEMAN CORP. 300 Friendship Dr. (7209-6974) Phone—(336) 695-0744 Fax—(336) 665-0723

SIC—3954)

National—(800) 621-3694

Employes—3; Estab.—1967

Sales—$1,000,000

Distrib.—U.S.

Privately owned sub-S corp.

CHERRY VISION INC. 602 S. Elm St. P.O. Box 434 (7204)

Phone—(336) 275-5602 Fax—(336) 285-9034 www.cherylvision.com

Email—info@cherylvision.com

Owner—Sidney Gray

SIC—3931; NAICS—339942; Art supplies

Employes—2; Estab.—1977

Sales—$50,000

Distrib.—Local

Privately owned corporation

See Parent Co. Section for full profile.

CIEHL-ABEGG, INC. 6348 Burnt Poplar Rd. (27208) Phone—(919) 834-9339 Fax—(919) 834-9340

SIC—3952)

National—(800) 608-9210

Employes—8; Estab.—1980

Sales—$1,500,000

Distrib.—Regional

Privately owned corporation

See Parent Co. Section for full profile.

COLUMBUS ANTIQUES LTD. 3010 Executive Dr. (72406) Phone—(706) 272-6150 Fax—(706) 272-8157

SIC—5038) Art & heirlooms

Employes—6; Estab.—1997

Sales—$500,000

Distrib.—Local

Privately owned corporation

See Parent Co. Section for full profile.

COLUMBUS H-TECH MFG, LLC 1820 Fairlady Rd. (7207) Phone—(404) 882-5670 Fax—(404) 882-1849 www.columbushtech.com

Pres.—Don Olson V.P.—Bob Hyapse Cont.—Supervision

(SIC—3639; NAICS—333110: Other instruments and related equipment

Employes—25; Estab.—1998

Sales—$1,000,000

Distrib.—National

Privately owned corporation

See Parent Co. Section for full profile.

CONCEPT DEVELOPMENT STUDIOS 1724 Holrock St. (7203) Phone—(336) 274-6599 Fax—(336) 379-8894

www.envisionnc.com


Employes—10; Estab.—1975

Sales—$2,500,000

Distrib.—Local

Sole ownership

DBA: Envision

CONEN DENIM, LLC Div. of International Textile Group, Inc. 4240 Fairview St. (72045-4000) Phone—(336) 235-7001 Fax—(336) 230-7007

www.itg-global.com

Email—info@itg-global.com


Employes—50; Estab.—1905

Sales—$1,000,000

Distrib.—Regional

Privately owned corporation

See Parent Co. Section for full profile.

CONSOLIDATED CONTAINER CO. 2030 E Market St. (72041) Phone—(336) 274-6100 Fax—(336) 274-6148

www.cocatc.com

Email—stacyellis@cocatc.com Pit. Mgr.—Stacy Ellis SIC—3429; Blow-molded plastic packaging bottles

Employes—30; Estab.—1999

Sales—$500,000

Distrib.—Local

Privately owned corporation

Parent co.—Consolidated Container Co., Inc. Phone—(919) 742-4600 See Parent Co. Section for full profile.

CONSOLIDATED PIPE & SUPPLY CO. Div. of Consolidated Pipe & Supply Co., Inc. 403 Norwalk St. (72047) Phone—(336) 284-8777 Fax—(336) 294-8079

www.consolidatedpipes.com

Ops. Mgr.—Troy Smith Off. Mgr.—Jared Ledermann Sales Rep.—Stuart Peterson SIC—5084; 3091; Wholesaler of pipe, valves & fittings

Employes—10; Estab.—1991

Sales—$500,000

Distrib.—Local

Privately owned corporation

Parent co.—Consolidated Pipe & Supply Co., Inc., Birmingham, AL Phone—(205) 232-7261 See Parent Co. Section for full profile.

CONSUMER SOURCE, INC. 1801 Sterlin Rd., Ste. 104 (72407) Phone—(336) 865-6578 Fax—(336) 865-7781 www.apartmentguide.com

Publisher—Kimberly Foust
Long Term or Short Term Monitoring Plan

- POTW Site-Specific Sampling Plan
- collects data for use in
  - Headworks Analysis (HWA)
    - WWTP removal rates
    - WWTP inhibition criteria
    - WWTP influent + uncontrollable load
  - Local Limits
  - NPDES/Non-discharge permit
- Full Programs – Long; Modified – Short; Only difference is the frequency.
LTMP/STMP Pollutants of Concern (POCs)?

- NPDES Permit Limited Pollutants of Concern
- Sludge Regs (40 CFR 503) - As, Cd, Cu, Pb, Hg, Mo, Ni, Se, and Zn
- EPA Required - Cd, Cr, Cu, Pb, Ni, Zn
- SIU IUP Limits - Ag, CN, Chlorides, Fluoride, organics, etc.

- Not all POTWs have the same POCs
- A POTW’s POCs can change over time
Typical LTMP/STMP Monitoring Locations at a WWTP

1. Bar Screen
2. Clarifier
3. Aeration Basin
4. Aerobic Digester

Grit Removal

Chlorine Disinfect

Sludge
Typical LTMP Monitoring Frequencies

- Full Programs have a LTMP—Long Term Monitoring Plan
  - Influent and Effluent - Quarterly
  - Aeration Basin - Semi-annually
  - Sludge to Disposal - per sludge permit
Typical STMP Monitoring Frequencies

- Modified Programs have a STMP-Short Term Monitoring Plan
  - **Influent and Effluent**- One year of quarterly sampling every 5 years
  - **Aeration Basin**- once every 5 years
  - **Sludge to Disposal**- per sludge permit
LTMP/STMP Detection Levels

- Detection levels must be approved by DWR in LTMP/STMP
- *Comp Guide, Chapter 4, Appendices 4-A, 4-C, and 4-D, page 3*
  - Some POTWs use lower
  - Some POTWs allowed to use higher in DWR approved LTMP/STMP
LTMP/STMP Guidance

- Find yours.
- Understand and follow it.
- Comprehensive Guide, Chapter 4
- Data Summaries - forms on website
- If LTMP/STMP doesn’t do what you need it to do, change it!
  - Too much, too little data, useless data
- Effluent LTMP/STMP data on DMRs
  - All pollutants
Headworks Analysis (HWA)

- Technical Analysis of a WWTP
  - Passthrough, inhibition, sludge
- Maximum Allowable Headworks Loading (MAHL)
- Maximum Allowable Industrial Loading (MAIL)

- HWA Workshops scheduled twice a year. PERCS specifically invites POTWs with upcoming HWAs due, but all are welcome!
Three Limiting Criteria

Biological Inhibition

Influent → Aeration Basin → Nitrification → Aerobic/Anaerobic Digester → Effluent

Pass Through NPDES and WQS

Sludge Standards Ceiling and Cumulative
Unit Conversions

METRIC PREFIX SCALE

T
tera
$10^{12}$

G

10^9

giga

M
mega
$10^6$

k
kilo
$10^3$

(none)

m
milli
$10^{-3}$

μ
micro
$10^{-6}$
n
nano
$10^{-9}$
p
pico
$10^{-12}$

10^2
hecto

10^1
deca

10^-1
deci

10^-2
centi
Pass Through cadmium load-based on WQS

Commercial

Residential

SIU’s

WWTP
7.168 MGD
67% RR

Influent = 6 ug/l
MAHL = 0.3623 #/day

Sludge Standards

2 µg/l NC Water Quality Std. stream flow zero at 10 year drought (7Q10)
Inhibition cadmium load

Commercial

Residential

1,000 µg/l
(59.8 lbs/day)
Influent
to prevent
inhibition

WWTP
Activated
Sludge

SIU’s

NPDES Permit Limits
Water Quality Standards

Sludge Standards

To prevent inhibition, the influent contains a cadmium load of 1,000 µg/l (59.8 lbs/day). This concentration is necessary for WWTP activated sludge to function efficiently.
Sludge cadmium load-based on 40 CFR 503

Water Quality Standards

- WWTP
  - 67% RR
  - 7.168 MGD
- SIU's
  - Residential
  - Commercial

21 ug/l (1.243 lbs/day) Influent

to prevent sludge problems

Sludge Standards-
- 85 mg/kg
Evaluation of the most limiting criteria at the POTW

1) Pass Through Criteria - 6 ug/l
2) Biological Inhibition Criteria - 1,000 ug/l
3) Sludge Criteria – 21 ug/l

Use the most limiting factor as the Maximum Allowable Headworks Load (MAHL)

MAHL = 6 ug/l or 0.3623 lbs/day based on passsthrough
Pass Through cadmium load-based on WQS

NC
WQS = 2 ug/l; 7Q10 = 239 MGD (IWC = 3%);

WWTP
7.168 MGD
67% RR

Influent = 208 μg/l
MAHL = 12.4 #/day
to meet WQS

Sludge Standards
HWA and MAHL

- How can I get a larger MAHL?
  - Bigger river
  - better removal rate
  - site-specific inhibition criteria
  - more land for sludge disposal
Allocating Cadmium

Residential

Commercial

SIU #2

SIU #1

SIU #3

WWTP

7.168 MGD

67% RR

0.03 lbs./day
(1 ugl @ 3.594 MGD)
combined
Uncon.

0.0292 lbs/day
(70 ug/l @ 0.05 MGD)

Monitor @
3.6 MGD

Monitor @
0.85 MGD

Influent

Monitor

@ 0.85
MGD

0.3623 pounds/day

0.002 mg/L
to meet
WQS

7.168 MGD

Influent

Sludge Standards
Allocating the pollutant load

Cadmium Allocation

- 84% Reserve
- 8% SIU #1
- 8% Uncontrollable
### Allocation Table

**Spreadsheet Instructions:**
1. Applicable Values should be entered in the Heavy Bordered cells. Rest of the worksheet is protected, password is "2".
2. Formulas are discussed in the Comprehensive Guidance, Chapter 6, Section C.
3. HWA and AT worksheets in this workbook are linked. Pollutant Names, MAHLs, Basis, and Uncontrollable load in this AT worksheet are automatically entered from the HWA spreadsheet. This includes pollutant names in columns AT through BK.

<table>
<thead>
<tr>
<th>IUP</th>
<th>INDUSTRY NAMES</th>
<th>Permit Count</th>
<th>Permit Number</th>
<th>Type of Industry</th>
<th>Date Effective</th>
<th>Date Modification</th>
<th>Permit Expiring</th>
<th>Permit Limits</th>
<th>Conc. Limit</th>
<th>Load Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flying Carpet Co.</td>
<td></td>
<td>1005</td>
<td>textile</td>
<td>10/1/2008</td>
<td>9/30/2013</td>
<td></td>
<td>0.8500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Carolina Dye House, Inc.</td>
<td></td>
<td>1008</td>
<td>textile</td>
<td>10/1/2008</td>
<td>9/30/2013</td>
<td></td>
<td>3.6000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Metals Extraordinaire</td>
<td></td>
<td>1012</td>
<td>metal finish</td>
<td>8/1/2005</td>
<td>7/27/2006</td>
<td>7/31/2010</td>
<td>0.0500</td>
<td>50,000</td>
<td>0.0700</td>
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</tr>
</tbody>
</table>

**Column Totals =>**

|                  |                  |                |                  |                  |                |                |              |              |            |            |
|------------------|------------------|----------------|------------------|------------------|----------------|----------------|              |              |            |            |
| FLOW             | Cadmium          |                |                  |                  |                |                |              |              |            |            |
| Permit Limits    | Permit Limits    |                |                  |                  |                |                |              |              |            |            |
| MGD              | gal/day          | mg/l           | lbs/day           |                  |                |                |              |              |            |            |
| 4.5000           | 4,500,000        | 0.0292         |                  |                  |                |                |              |              |            |            |

Basis =>

- MAHL from HWA (lbs/day) =>
- Uncontrollable Loading (lbs/day) =>
- Total Allowable for Industry (MAIL) (lbs/day) =>
- Total Permitted to Industry (lbs/day) =>
- MAIL left (lbs/day) =>
- Percent Allow. Ind. (MAIL) still available (%) =>
- Percent MAHL still available (%) =>
- 5 Percent MAHL (lbs/day) =>

NPDES Permitted Flow =>

- NPDES =>
- Stream Std =>

- 13,5000
- 3.5940
- 9.9060
- 4.5000
- 5.4060
- 54.6%
- 40.0%
- 0.6750

- 0.3623
- 0.0300
- 0.3323
- 0.0292
- 0.3031
- 91.2%
- 83.7%
- 0.0181
Allocation Table

- SIU IUP limits
- Compute pounds/day
- Sum of SIU permitted load
- Compare against the MAHL and MAIL

No over allocation!

- Find yours.
- Understand it.
- *Comprehensive Guide, Chapter 6*
Compliance Judgment

- Is the SIU in compliance with the IUP or not?
- Compliance judgment responsibilities and required time frames in ERP.
**Compliance Judgment Worksheet For SNC With Limits**

Use separate sheets for each industry. SNC determination for Flow optional, see Section 7-E. Use separate sheets for each Pollutant.

**SIU Name:** WillPlateit Metal Finishers  
**IUP Number:** 0006  
**Pipe Number:** 0001  
**Parameter:** Cadmium  
**Six Month SNC Determination Period:** 7/1/2012-12/31/12

See next page for definitions.

<table>
<thead>
<tr>
<th>Daily Max. or Ave. Limits</th>
<th>IUP Limit * TRC criteria = TRC Limit</th>
<th>Circle which units apply to each individual Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Circle 1.4 For TRC for BOD, TSS, oil, fat, grease; Circle 1.2 for all other pollutants</td>
<td></td>
</tr>
<tr>
<td>TRC compliance judgment not required for pH:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Daily Maximum Limit: \[ \frac{0.07}{1.2} \text{ or } 1.4 \] = TRC Daily Limit: \[ \frac{0.084}{\text{mg/l or lbs/day}} \]
Average Limit: \[ \frac{1.2}{1.2} \text{ or } 1.4 \] = TRC Avg. Limit: \[ \frac{0.084}{\text{mg/l or lbs/day}} \]

**Column 1:** I - Industry self  
**Column 5:** Use only if IUP has (monthly, or other?) average limit. Average values of all sampling events collected within the "average" period (for example, for a monthly average limit, use all values collected within a calendar month) and enter this average in column 5. Compare this average to the appropriate average IUP limit or TRC limit.

**Column 6:** Use only if IUP has daily limits in lbs/day. Formula to use is (mgd * mg/l * 8.34 = lbs/day).

**Column 7:** Use only if IUP has (monthly?) average limits in lbs/day. Use (mgd * mg/l * 8.34 = lbs/day).

**Column 8:** Put "1" for each daily maximum or average value, tally at bottom as "A."

**Column 9:** Compare daily and average values to IUP limits above, put "0" if at or below limit, "1" if above, tally at bottom as "B."

**Column 10:** Compare daily and average values to TRC limits above, put "0" if at or below limit, "1" if at or above, tally at bottom as "C."

<table>
<thead>
<tr>
<th>Col. 1: From IDMRs</th>
<th>From IDMRs</th>
<th>From DMRs</th>
<th>Col. 5:</th>
<th>Col. 6:</th>
<th>Col. 7:</th>
<th>Col. 8:</th>
<th>Col. 9:</th>
<th>Col. 10:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Type</td>
<td>Sample Date</td>
<td>Daily Flow, mgd</td>
<td>Daily Conc. mg/l</td>
<td>Avg Conc. mg/l</td>
<td>Daily Load lbs/day</td>
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</tbody>
</table>

List these Totals on next page => A = 10  
B =  
C =
Compliance Judgement Worksheet For SNC With Limits

Use separate sheets for each Industry
SNC determination for Flow optional, see Section 7-E
Use separate sheets for each Pollutant

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Cadmium</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIU Name</td>
<td>WillPlateit Metal Finishers</td>
</tr>
<tr>
<td>IUP Number</td>
<td>0006</td>
</tr>
<tr>
<td>Pipe Number</td>
<td>0001</td>
</tr>
<tr>
<td>Six Month SNC Determination Period</td>
<td>7/1/2012-12/31/12</td>
</tr>
</tbody>
</table>

See next page for definitions

<table>
<thead>
<tr>
<th>Daily Max. or Ave. Limits from IUP</th>
<th>IUP Limit * TRC criteria = TRC Limit</th>
<th>Circle 1.4 For TRC for BOD, TSS, oil, fat, grease; Circle 1.2 for all other pollutants</th>
<th>TRC compliance judgment not required for pH</th>
</tr>
</thead>
</table>

- **Daily Maximum Limit:** \(0.07\) * \(1.2\) or \(1.4\) = TRC Daily Limit: \(0.084\) mg/l or lbs/day
- **Average Limit:** \(0.07\) * \(1.2\) or \(1.4\) = TRC Avg. Limit: \(0.084\) mg/l or lbs/day

**Column 1:** Industry self
**Column 2:** POTW
**Column 3:** Average

**Column 5:** Use only if IUP has (monthly, or other?) average limit. Average values of all sampling events collected within the "average" period (for example, for a monthly average limit, use all values collected within a calendar month) and enter this average in column 5. Compare this average to the appropriate average IUP limit or TRC limit.

**Column 6:** Use only if IUP has daily limits in lbs/day. Formula to use is \(\text{mgd} \times \text{mg/l} \times 8.34 = \text{lbs/day}\).

**Column 7:** Use only if IUP has (monthly?) average limits in lbs/day. Use \(\text{mgd} \times \text{mg/l} \times 8.34 = \text{lbs/day}\).

**Column 8:** Put "1" for each daily maximum or average value, tally up at bottom as "A."

**Column 9:** Compare daily and average values to IUP limits above, put "1" if at or above, tally at bottom as "B."

**Column 10:** Compare daily and average values to TRC limits above, put "1" if below, tally at bottom as "C."

<table>
<thead>
<tr>
<th>Col. 1: From IDMRs</th>
<th>From IDMRs</th>
<th>From IDMRs</th>
<th>Col. 5:</th>
<th>Col. 6:</th>
<th>Col. 7:</th>
<th>Col. 8:</th>
<th>Col. 9:</th>
<th>Col. 10:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Type</td>
<td>Sample Date</td>
<td>Daily Flow, mgd</td>
<td>Daily Conc. mg/l</td>
<td>Avg Conc. mg/l</td>
<td>Daily Load lbs/day</td>
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<td>Count</td>
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</tbody>
</table>

List these Totals on next page => A = 10, B = 6, C =
Compliance Judgment Worksheet For SNC With Limits

Use separate sheets for each Industry  SNC determination for Flow optional: see Section 7-E  Use separate sheets for each Pollutant

<table>
<thead>
<tr>
<th>SIU Name: WillPlateit Metal Finishers</th>
<th>IUP Number: 0006</th>
<th>Pipe Number: 0001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter: Cadmium</td>
<td></td>
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</tbody>
</table>

See next page for definitions

<table>
<thead>
<tr>
<th>Daily Max. or Ave. Limits from IUP</th>
<th>IUP Limit * TRC criteria = TRC Limit</th>
<th>Circle which units apply to each individual Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column 1:</td>
<td>Circle 1.4 For TRC for BOD, TSS, oil, fat, grease; Circle 1.2 for all other pollutants</td>
<td></td>
</tr>
<tr>
<td>Column 5:</td>
<td>TRC compliance judgment not required for pH:</td>
<td></td>
</tr>
</tbody>
</table>

Daily Maximum Limit: \( 0.07 \) * 1.2 or 1.4 = TRC Daily Limit: \( 0.84 \) mg/l or lbs/day

Average Limit: \( 0.12 \) or 1.4 = TRC Avg. Limit: \( 0.18 \) mg/l or lbs/day

<table>
<thead>
<tr>
<th>IUP Limit * TRC criteria = TRC Limit</th>
<th>Circle which units apply to each individual Limit</th>
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</thead>
<tbody>
<tr>
<td>Circle 1.4 For TRC for BOD, TSS, oil, fat, grease; Circle 1.2 for all other pollutants</td>
<td></td>
</tr>
</tbody>
</table>

TRC compliance judgment not required for pH:

Column 1: 1 - Industry self  P - POTW  A - Average

Column 5: Use only if IUP has (monthly, or other?) average limit. Average values of all sampling events collected within the "average" period (for example, for a monthly average limit, use all values collected within a calendar month) and enter this average in column 5. Compare this average to the appropriate average IUP limit or TRC limit.

Column 6: Use only if IUP has daily limits in lbs/day. Formula to use is ( mgd * mg/l * 8.34 = lbs/day ).

Column 7: Use only if IUP has (monthly?) average limits in lbs/day. Use ( mgd * mg/l * 8.34 = lbs/day ).

Column 8: Put "1" for each daily maximum or average value, tally up at bottom as "A."

Column 9: Compare daily and average values to IUP limits above, put "0" if at or below limit, "1" if above, tally at bottom as "B."

Column 10: Compare daily and average values to TRC limits above, put "0" if below limit, "1" if at or above, tally at bottom as "C."

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List these Totals on next page =>

A = 10  B = 6  C=4
Compliance Judgement Worksheet For SNC With Limits

SIU Name: WillPlateit Metal Finishers
IUP Number: 0006
Pipe Number: 0001
Parameter: Cadmium
Six Month SNC Determination Period: 7/1/2012-12/31/12

SIGNIFICANT NON-COMPLIANCE (SNC) LIMITS DETERMINATION

1) Calculate the % of Regular violations: 6/10  B/A = 60.0%
2) Is B/A greater than or equal to 0.66 (or 66 %)? Chronic violator? Yes / No
3) Calculate the % of TRC Violations: 4/10  C/A = 40.0%
4) Is C/A greater than or equal to 0.33 (or 33 %)? TRC Violator? Yes / No
5) Did any violation, alone or in combination with other discharges, cause pass-through or interference at the POTW, or endanger the health of POTW workers or the public? Yes / No
6) Did any violation cause imminent endangerment to human health / welfare or to the environment or has resulted in the POTW's exercise of its emergency authority to halt or prevent such discharge? Yes / No
7) If the answer to any of these questions is yes, the SIU is in Significant Non-Compliance (SNC) for this parameter. They must be listed on the Significant Non-Compliance Report (SNCR) form in the Pretreatment Annual Report (PAR), described in the PAR narrative (including parameter, period, and POTW actions), and the POTW must take adequate enforcement as outlined in its Enforcement Response Plan (ERP).

Is the SIU in SNC for this six month period? CIRCLE ONE: YES NO
Was the SIU in SNC for THE SAME PARAMETER in the previous six month compliance period? CIRCLE ONE: YES NO
If YES to EITHER question, DESCRIBE IN NARRATIVE.

Now What?

Please note if SIU was in SNC for the previous six month compliance period and is also in SNC for this six month compliance period, escalated enforcement actions must be taken as soon as possible, preferably before the end of the second consecutive period. Failure to take the action within 2 months after the end of the second consecutive period will subject the POTW to enforcement by the Division. The options are:
- Consent Order with Enforceable schedule;
- Administrative Order with Enforceable schedule;
- Permit modification.

See Chapter 9 - Pretreatment Annual Reports, Chapter 8 - Enforcement, and the POTW’s Enforcement Response Plan (ERP).

Definitions:
- Count, The number of daily sample data values or the number of average of sampling events used for checking compliance with average limits.
- TRC Technical Review Criteria, Multiply the actual IUP limits by the proper TRC Criteria value to get a TRC Limit:
  - TRC Criteria = 1.4 for BOD, TSS, oil, fat, grease
  - TRC Criteria = 1.2 for all other pollutants
- SNCR Significant Non-Compliance Report
- SNC Significant Non-Compliance Report

Per ORC
Sampling of SIUs

- Must be performed per IUP
  - 15A NCAC 15H .0908(e) and 40 CFR 403.8(f)(2)(v)
  - 40 CFR 136
- DWR Chain of Custody forms found in Comprehensive Guide, Appendix 7-A and B
- Data Summaries
  - good detection levels
  - separate column for “less than” sign
  - average, max, min, and lbs/day
Reporting by SIUs

- Must be performed per IUP
- Must submit reports on time
- IUP Part II, 2-sampling reports and 24 hour notification of violations
- Most other IUP conditions, including
  - Part II, 4 - additional monitoring
  - Part II, 7 - pretreatment unit operations
  - Part II, 23 - re-application
  - Part II, 25 - changes in operation
  - Part II, 30 - potential problems
- SIU communicate early and often
Inspections

- REQUIRED ANNUALLY AT ALL SIUs
- POTW staff goes on-site to SIU to confirm the SIU is in compliance:
  - Production changes
  - Pretreatment Unit operation
  - Sampling and data summary sheets
    - Are they the same as what SIU sent you? Especially important if SIU not required to submit lab sheets and chain of custody
  - Slug/Spill Control Plan needed, followed
  - Housekeeping
  - Schematic/Diagram in application/permit adequate
Enforcement Response Plan (ERP)

- Enforcement that is timely, effective, fair, and equitable
  - Response time for POTW’s issuance of Notices of Violation, etc.
  - Required fines/penalties
  - Required follow-up actions
  - Enforcement actions must escalate
Sampling, Inspection, and Enforcement

- Find your IUPs and ERP.
- Understand and follow them.
  - Comprehensive Guide, Chapter 6 - IUP
  - Comprehensive Guide, Chapter 7 - Compliance Judgment, Sampling, and Inspection
  - Comprehensive Guide, Chapter 8 - Enforcement
- If IUPs and ERP don’t do what you need them to do, change them!
  - Too harsh, too weak, can cause extra work
Pretreatment Annual Report (PAR)

- Annual Progress Report
- DWR review of these documents:
  - Pretreatment “vital signs”
  - accuracy
  - compliance judgment
- Complete PAR required for Full Programs
  - Modified Programs must submit SIU in SNC info, PPS form, Program Info
- Due March 1st. - Compile in one pdf and be emailed to PERCS Unit
- Classes in Jan/Feb of each year
Files - Organized
Files - Complete

- keep at least 3 years (recommend 5)
- for major elements that are in effect for long periods, such as HWAs, IUPs, SUO, keep latest version and one before that (~6-10 years)
- Categorical determination—forever?
Pretreatment Info (SIU)
Files-SIUs

- IUP, with transmittal letter, synopsis, application, and DWR approval letter
- Inspections
- NOVs and SIU responses
- Correspondence, possibly separated by POTW and SIU
- Data, possibly separated by POTW collected and SIU collected
Funding

- Fair and Equitable
- Defendable
- Based on actual costs

Examples:
- Permit Charge
- Sampling Cost Recovery Charges
- Administration Charge
- LTMP Charge

**Do you have enough money?**
DWR Inspections and Audits

- DWR staff goes on-site a minimum of 3 times in 5 years to the POTW:
  - program elements
  - files
  - sampling and data summary sheets
  - compliance judgment/enforcement
  - SIU correspondence
  - inspections of SIUs
DWR Guidance and

• DWR Guidance - *Comprehensive Guidance for North Carolina Pretreatment Programs or “Comp Guide”*

• Training
  ◦ One-day workshops on PAR, HWA and IUPs
  ◦ Phone calls, emails, meetings, letters

• Website –
  http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/percs/pretreatment-permits
POTW Support and Training

• POTWs -
  ◦ Annual Pretreatment Conference - presented by NC-PC Conference Planning Committee
  ◦ Pretreatment Consortium - www.ncpretreatment.org
  ◦ Voluntary Certification Program
  ◦ One on one support
Summary

- You are now ready (hopefully)!
- Find and read your Pretreatment Program Elements in your files
  - element itself
  - submittal letter to DWR
  - approval letter from DWR
  - especially IUPs, AT, LTMP/STMP, ERP
- Read *Comprehensive Guide*
  - especially Chapters 7 and 8
- Call us with any questions
3. Find x.

Here it is 0.
Acronyms

- AT: Allocation Table
- BOD: Biological Oxygen Demand
- CIU: Categorical Industrial User
- DEQ: Department of Environmental Quality
- DMR: Discharge Monitoring Report
- DWR: Division of Water Resources
- EPA: Environmental Protection Agency
- ERP: Enforcement Response Plan
- HWA: Headworks Analysis
- IU: Industrial User
- IUP: Industrial User Pretreatment Permit
- IWS: Industrial Waste Survey
- LL: Local Limit
- LTMP: Long term monitoring plan
- MAHL: Maximum Allowable Headworks Loading
- MAIL: Maximum Allowable Industrial Loading
- MGD: Million gallons per day
- NCAC: North Carolina Administrative Code
- NCGS: North Carolina General Statute
- NPDES: National Pollutant Discharge Elimination System
- OCPSF: Organic chemicals, plastics and synthetic fibers
- PAR: Pretreatment Annual Report
- PERCS: Pretreatment, Emergency Response and Collection Systems
- POC: Pollutant of Concern
- POTW: Publicly Owned Treatment Works
- QNCR: Quarterly noncompliance report
- RPA: Reasonable potential analysis
- SIU: Significant Industrial User
- SNC: Significant noncompliance
- STMP: Short term monitoring plan
- SUO: Sewer Use Ordinance
- TMDL: Total Maximum Daily Load
- WQS: Water Quality Standard
- WWTP: Wastewater Treatment Plant
Contacts

- Monti Hassan 919-707-3626
  - Chowan, Hiwassee, Little Tennessee, Neuse, Roanoke, Yadkin

- Vivien Zhong 919-707-3627
  - Broad, Cape Fear, Catawba, French Broad, Lumber, New, Tar-Pam

Email: FirstName.LastName@ncdenr.gov

Jeff Poupart 919-707-3600
PT 101
JEOPARDY!