Agenda

- Back to basics – what’s an IPP?
- IPP Development
- Technical
- Legal
- Implementation
- Compliance/Operations
- Continuing Improvements
Before we Get Started…

- Wake Up!
- Everybody stand UP!
Thank You for Your Service

- You deserve $100,000
Back to Basics

- Wide ranging experience in the room
- New people to IPP
- Folks approaching retirement
- Learn from each other
- Networking/seminars/MWEA IPP Committee
Back to Basics:
What is an Industrial Pretreatment Program?
History

- Nationally established under the Clean Water Act (1972)
  - EPA established National Industrial Pretreatment Program-regulates indirect discharges to POTWs

- Only environmental program that allows local governments (POTWs) to implement and enforce federal regulations

- In Michigan, MDEQ plays a key role, working with local governments
IPP in Michigan

- Michigan Part 23 Rules
- Good Resources: [www.mi.gov/ipp](http://www.mi.gov/ipp)
IPP in Michigan

- Get to know your MDEQ IPP staff
- It’s better to discuss more than just your annual inspection with them
- Here’s a map showing District staff (available on the web)
Who Needs an IPP?

▪ POTWs that:
  ▪ Receive discharges from industrial users with the potential for pass through, interference, or biosolids contamination
  OR
  ▪ Receive discharges from categorical industrial users
    ▪ e.g. metal finishers, different types of food processors, soap/detergents manufacturers, plastics manufacturers, leather/tanners
  ▪ See complete list at: www.ecfr.gov
Who Needs an IPP?

▪ What if I have non-categorical industrial users?
▪ Are they significant?
  ▪ More than 25,000 gpd process wastewater
  ▪ More than 5% of avg dry weather flow
  ▪ More than 5% of organic load
  ▪ High concentration of metals
  ▪ If you answered “yes” to any of these, you probably need an IPP...
“I don’t have an IPP, but I need one; what now?”

- “MDEQ told us we need to develop an IPP”
- Learn from others/experts
- Starting from ‘scratch’
- Multi faceted program:
  - Technical requirements
  - Legal requirements
  - MDEQ review & approval
  - Usually iterative process
Technical Requirements

▪ Maximum Allowable Headworks Loading Evaluation (MAHL)
▪ Develop Local Limits
▪ Special Allocation Limits (SALs)
▪ Industrial User Permits
MAHL to Determine WWTP Capacity

- Maximum Allowable Headworks Loading
  - The estimated maximum loading of a pollutant that can be received at a POTW’s headworks without causing pass through, interference (or biosolids contamination)
  - Determined as the most protective (lowest) of the AHLs estimated for a pollutant.

- Allowable Headworks Loading (AHL)
  - Est. allowable loading of a pollutant that can be received at a POTW’s headworks that should not cause a POTW to violate a particular treatment plant or environmental criteria.
MAHL to Determine WWTP Capacity

- Criteria Considered – Non-Compatibles
  - NPDES discharge or GW permit effluent limits
  - Water Quality based limits (chronic or acute toxicity)
  - Secondary Treatment Inhibition
  - Nitrification Treatment Inhibition
  - Digester Inhibition
  - Biosolids Contamination (Part 503)
MAHL to Determine WWTP Capacity

- Follow EPA’s Local Limits Development Guidance Document

- Sample requirements – at least 6 for:
  - Each SIU/CIU
  - WWTP influent
  - Primary effluent
  - Final effluent
  - Domestic sample(s)
  - Biosolids/sludge
MAHL to Determine WWTP Capacity

- **Discharge permit limits**

\[
L_{NPDES} = \frac{8.34 \times C_{NPDES} \times Q_{POTW}}{(1 - R_{Avg})}
\]

\[
L_{Chronic} = Q_{POTW} \times 8.34 \times \frac{WQBEL_c / 1000}{(1 - R_{Avg})}
\]

\[
WQBEL_c = C_{WQS} \times \frac{(Q_{MAX} + (25\% \times Q_{STREAM})}{Q_{MAX}}
\]

- **Water Quality based limits**

\[C_{WQS}\] for various pollutants are tabulated in Part 57 Rules
MAHL to Determine WWTP Capacity

- **Treatment Inhibition**
  
  \[ L_{\text{INHIB, Sec}} = \frac{Q_{\text{POTW}} \times 8.34 \times C_{\text{INHIB, Sec}}}{1 - R_{\text{PRIM}}} \]

- **Digester Inhibition**
  
  \[ L_{\text{INHIB, Dig}} = \frac{Q_{\text{Dig}} \times 8.34 \times C_{\text{INHIB, Dig}}}{R_{\text{Avg}} \times F_{\text{sorp}}} \]

- **Biosolids Contamination**

  \[ L_{\text{Sludge}} = Q_{\text{Sludge}} \times \frac{TSS_{\text{Sludge}}}{100} \times 8.34 \times \frac{C_{\text{Sludge}}}{R_{\text{avg}} \times F_{\text{sorp}}} \]
MAHL to Determine WWTP Capacity

- Example of non-compatible MAHL spreadsheet

<table>
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<th></th>
<th>Arsenic</th>
<th>Cadmium</th>
<th>Chromium</th>
<th>Copper</th>
<th>Cyanide</th>
<th>Lead</th>
<th>Mercury</th>
<th>Molybdeum</th>
<th>Nickel</th>
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<td>-</td>
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<td>33.3</td>
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<td>0.686</td>
<td>6.830</td>
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<td>0.537</td>
<td>0.375</td>
<td>0.013</td>
<td>5.63</td>
</tr>
</tbody>
</table>

| Basis  | BS | A | SI | A | SI | BS | A | BS | BS | BS | BS | C | A |

- **Note:** The table above shows the Allowable Headworks Load for various elements and standards, along with the MAHL values for comparison.
Local Limits – Non-Comaptibles

- Developed for a specific POTW
- Loadings of pollutants a POTW can accept without causing pass through, interference, or permit violations
- Because no one wants the river/creek in their neighborhood to look like this →
MAHL to Determine WWTP Capacity

- Criteria Considered – Compatible Pollutants
  - NPDES discharge permit limits (or GW permit effluent limits)
  - Water Quality based limits
  - WWTP Design Basis
  - Calibrated Biological Wastewater Treatment Plant Models (for max day loading, if DEQ approves this method)
Non-Uniform Allocation of Compatibles

- Divvy up the MAHL “pie”
- Account for domestic sources and reserve
- Allocate remaining MAIL
- Special Allocation Limits (SALs)
Legal Requirements

▪ SUOs outline the regulations for Sewer Use

▪ Need an IPP section in the SUO that gives the POTW the authority to regulate a facility in accordance with an IPP
  ▪ Authority to conduct inspections
  ▪ Ability to establish local limits
  ▪ Ability to limit or control discharge
  ▪ Fees and surcharges

▪ Work with an experienced attorney
Review & Approval

- MAHL evaluation/report
- Proposed Local Limits
- Proposed SUO updates/changes
  - Proposed SIU allocations/permits
  - IPP Procedures/IPP Manual/Forms
  - Enforcement Response Plan
Implementation

▪ Municipality ratifies SUO updates
▪ Issue SIU/CIU discharge permits
▪ SIU/CIU self-monitoring & reporting
▪ Annual SIU/CIU inspection
▪ Surprise SIU/CIU sampling/inspections
▪ MDEQ Annual Inspections of POTW IPP
IPP Manual

- Program Description & Procedures
- Other Items to include in manual:
  - Inspection Forms
  - Permit Application/Renewal Form
  - Sample Collection Forms
  - Enforcement Response Plan (ERP)
  - List of IUs/Non-Domestic Users
  - Slug Discharge Control Policy
Compliance and Operations - Sampling

- POTW must sample each SIU at least once per year for all regulated pollutants
- All SIUs must self-sample a minimum of 2 times per year for all regulated pollutants
- Permitted users must sample/report in accordance with discharge permit & federal requirements (if categorical)
Compliance & Operations - Annual Inspections

- Prepare before doing inspection:
  - Review current discharge permit
  - Review recent sampling results/monthly reports
  - Review last two years’ inspection reports

- Follow up on any items flagged for action

- Submit Inspection report to industry within 30 days
Pretreatment In Action:
Some Examples
Compliance and Operations-Reporting

- Annual Report to EPA / MDEQ
- Updated list of IUs, SIUs & CIUs
- Summary of compliance
- Summary of enforcement & inspections
Compliance and Operations-Enforcement

- Enforcement procedures detailed in ERP
- Escalate if appropriate action isn’t taken in timely manner

**Minor/Insignificant Noncompliance**
- Level 1 response: Informal Communication
- Telephone call & Follow up Letter

**Potentially Significant and/or Infrequent Violation**
- Level 2 response: Formal Communication
- Notice of Violation

**Significant Violation**
- Level 3 response: Administrative Order
- Show Cause Order, Consent Order, or Compliance Order

**Major Violation or Emergency**
- Level 4 response: Civil Litigation and/or Criminal Prosecution
- Level 5 response: Suspension of Service (Cease & Desist Order, Notice of Termination)
Some hints to make it go smoothly:

- Need good/organized documentation
- All reporting hard copy (not pdf/emails) with received-on date stamped
- Have IU list up-to-date
- Make sure all violations were followed up on in accordance with the approved ERP (and documented)
Paying for IPP

- IPP should be paid for by those industries that require a municipality to have the program
- IPP charge as part of user rates
  - Usage charge for all non-domestic users
  - Usage charge for all permitted users
- Sampling & inspection expenses charged to specific industry
Surcharges – Part of IPP?

- Surcharges are different from IPP fees
- Surcharges are extra charges to cover increased O&M expenses for higher strength wastewater (compatibles)
- Bottom line: Surcharges should not be used to pay for the IPP program, IPP should be a sustainable program without surcharge fees
Continuing Improvements

- Ongoing Federal & State level improvements
- Many aspects of the IPP should be updated routinely:
  - MAHL Evaluation
  - IU/Non-Domestic User Lists
  - Industrial Discharge Permits
  - IPP Manual/Procedures if regs change
- So...
  Whether you’ve been doing IPP for 30 years OR are brand new to the program, stay involved and up-to-date!
Continuing Interest in IPP

▪ Labor gap—many experienced folks retiring, need to pass on their knowledge

▪ You took the first step – you’re attending this seminar!

▪ Networking with fellow IPP staff-DEQ, other communities with IPP

▪ Join the MWEA IPP Committee
QUESTIONS