New River Pollution from Mexico

Update
New River at Calexico (Before Las Arenitas)

Total (Avg) = 150-200 cfs

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal WWTFs Flow</td>
<td>20 %</td>
</tr>
<tr>
<td>Direct Industrial</td>
<td>7.5 %</td>
</tr>
<tr>
<td>Agricultural discharges</td>
<td>65 %</td>
</tr>
<tr>
<td>Other</td>
<td>3.5 %</td>
</tr>
</tbody>
</table>

About 15 MGD of raw sewage
Sources of Pollution

- Municipal sewage
- Industrial wastes
- Solid wastes
- Ag, stormwater, urban runoffs
Raw sewage spills, bypasses
Treatment Lagoons Problems

- Undisinfected
- High in nutrients
- High TSS
Industrial wastes
Livestock Waste
Dumping
The Plan (Treaty Minute 294)

**Quick Fixes**
- 11 Emergency repairs
  - $7.5 M

**Mexicali I Projects**
- Sewer main rehabilitation (~20 miles)
- Telemetry equipment
- Expected completion by 2004
  - $51 M

**Mexicali II Projects**
- New 20-mgd pumping plant
- New 20-mgd force main
- New 20-mgd treatment plant
  - $26 M
New River at Calexico (2005)

<table>
<thead>
<tr>
<th>Constituents of Concern</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fecal, E. Coli</td>
<td>&gt; 1,000,000</td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>&lt; 1.0 mg/L</td>
</tr>
<tr>
<td>Nutrients (PO4)</td>
<td>40% of Load to Salton Sea</td>
</tr>
<tr>
<td>VOCs</td>
<td>Some detected</td>
</tr>
<tr>
<td>Trash</td>
<td>&gt; 150 cu yds/year</td>
</tr>
</tbody>
</table>

Avg Flow ~120 MGD
Update of Binational Efforts in Mexico
Mexicali II Project

**Cost Estimate (Millions of USD)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation of force main pipe - Phase 1 (9 Km)</td>
<td>1.1</td>
</tr>
<tr>
<td>Purchase and install force main pipe – Phase 2 (17 km)</td>
<td>10.0</td>
</tr>
<tr>
<td>Upgrade Pump Station 4</td>
<td>3.0</td>
</tr>
<tr>
<td>Las Arenitas WWTP</td>
<td>11.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$ 25.9</strong></td>
</tr>
</tbody>
</table>
New River - Fecal Coliforms

Standard: no more than 10% samples/month shall exceed 400 MPN/100 ml

Las Arenitas Goes online

- Maximum
- Median
New River - Pathogen Indicators
(After Las Arenitas)

Bacteria (MPN/100 ml)

Early 2007

Fecal Coliforms
E Coli
New River - Dissolved Oxygen

Date

DO (mg/L)
0 1 2 3 4 5 6 7 8

Standard = 5.0 mg/L

Las Arenitas Goes online

Goes online
And Then…

DO (mg/L)

Oct-06  Feb-07  Jun-07  Oct-07  Feb-08
Bacteria (MPN/ 100 ml)

Fecal Coliform

Feb-07   Apr-07   Jun-07   Aug-07   Oct-07   Dec-07
Ongoing Problems
Pumping raw sewages
Illegal Discharges
Mexicali I Treatment Lagoons

- Undisinfected
- High in nutrients
- High TSS
Observations/ conclusions

- Slugs persist and wipe out gains
  - Need to report bypasses
  - Need to track/identify slug sources

- Bacteria remains a serious problem
  - Raw sewage?
  - Trash
Observations (cont’d)

- Trash remains a significant problem
  - It must be addressed
  - Adds bacteria and other pollutants
  - Dumping of toxicants a concern

- Industrial discharges must be addressed
  - Slaughterhouse discharges
  - Dairies/CAFOs

- NPS must be addressed
Appendix A – New River Sampling Stations