



City of Poteau, Oklahoma
Sludge, Grease and Foam Reduction in Extended Aeration Facility

The Problem

The City of Poteau, Oklahoma is a 1.6MGD Extended Aeration Facility, experiencing difficulty with excessive sludge, grease, and foam. The plant received a daily average flow of .85 MGD. The mixed liquor solids volatile concentration was 65% and there was excessive grease and foam in the aeration basins. The centerwell of the clarifier was compacted with grease and foam, and had a scum blanket across the top of the clarifier. Constant attention was given to the clarifier to keep the grease cake and hard foam removed from the center well. The side walls of the aeration basins were caked with sludge and grease and the return sludge pump was operated almost continuously.

BYO-GON PX-109[®] was recommended as an aid in increasing plant efficiency. A metering pump, installed under the laboratory sink, began injecting at an initial dosage of 36 ounces per day for eleven days.

Results

| | Basin #1 | Basin #2 | Basin #3 | Basin #4 |
|---------------|-----------|-----------|-----------|-----------|
| Pre-trial | 6470 Mg/L | 7200 Mg/L | 5040 Mg/L | 7200 Mg/L |
| After 11 days | 720 Mg/L | 720 Mg/L | 1080 Mg/L | 720 Mg/L |

Suspended solids were reduced over the eleven-day period by a total of 31,590 pounds. In addition to the reduction of solids, the operator noted the following:

- No foam in the aeration basins & the centerwell of clarifier no longer had hard caked grease and foam
- No scum blanket on clarifier or sludge caked on aeration basin walls
- An eight foot reduction in the sludge blanket in the clarifier
- Operator is now able to decant 5-8' of clear water from the digester, increased from only 18" before treatment.

The operator also remarked that he usually wastes to four beds a year, but with the continued use of BYO-GON PX-109[®], he will not have to waste to his beds at all this year. After the eleven-day test period, the injection was reduced by over fifty-percent (50%) to a maintenance dosage.