



INTEGRATED



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Daily's Premium Meats – Missoula

AMI Environmental Conference

June 5, 2008

Indirect Discharge Problems



Daily Premium Meats Overview

- **Prior to 2005**
 - Anaerobic/Aerobic Lagoon
 - Clark Fork River Discharge
- **July 1, 2005: Ceased Direct Discharge to Clark Fork**
 - Process Wastewater Routed to City of Missoula
- **Non-contact Cooling Water Discharge**
 - MPDES Permit Renewal 2007



Daily Premium Meats "Nondegradation Allocated Loads" and "Actual Loads"

- Production Based Effluent Load Limitations from 1992 Permit
- Actual Average Loads January 2000 to June 2005
 - TN 4.87 lbs/d
 - TP 22.94 lbs/d

Table 3. Load Limitations and Actual Loads for POR

Load Limitations				Actual 30-day Average Loads (lb/day)					
Parameter	Units	30-Day Average Load	Maximum Daily Load	2000	2001	2002	2003	2004	2005
BOD ₅	lb/day	7.25	14.51	5.96	5.34	7.02	7.54	6.79	12.10
TSS	lb/day	9.68	19.36	16.60	9.12	13.31	12.88	10.83	24.40
TN	lb/day	NA	NA	3.16	4.74	4.47	4.07	4.87	8.50
TP	lb/day	NA	NA	29.7	14.69	21.11	23.31	22.70	26.15
O&G	lb/day	3.15	6.31	0.21	0.09	0.10	0.06	0.07	0.18

Clark Fork River Overview

- **VNRP Published August 1998**
 - 10 Year Program
 - Expired 2008
- **Load Allocations**
 - PS: Butte, Deer Lodge, City of Missoula, Stone Container
 - Nonpoint: Clark Fork, Missoula Area GW/Septic, Bitterroot River
- **Daily Premium Meats**
 - N and P Load Not Identified
 - Non-specific Missoula Area Loading in Missoula Area
 - No Wasteload Allocation (No Reduction Specified)



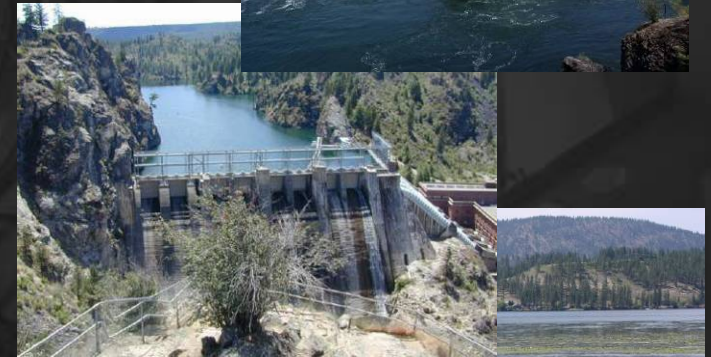
- **Missoula WWTP Wasteload Allocation**
 - Q 10 mgd (16.5 cfs)
 - TN 889 lbs/d (404 kg/d)
 - TP 88 lbs/d (40 kg/d)
- **TMDL Currently Being Renewed**
- **In-Stream Nutrient Targets**
 - TP 0.020 mg/l and 0.039 mg/l (Missoula area)
 - TN 0.300 mg/l

City of Missoula Overview

- **City of Missoula Biological Nutrient Removal Facility**
 - Commissioned February 2005
 - Current Flows ~8.3 mgd
 - TN 8.02 mg/l (summer)
 - TP 0.43 mg/l (summer)
- **MDPES Discharge Permit Renewal 2006**
 - Total Phosphorus Limit – 88 lbs/day
 - Total Nitrogen Limit – 888 lbs/day
 - Expiration October 2011
- **Missoula AWWTP Influent P**
 - Total Influent P load ~ 430 lbs/day
 - Daily's Premium Meats Contribution ~ 25 lbs/day (5.8%)

In-Stream Standards Applied “End-of-Pipe” -- Spokane River

- **Dissolved Oxygen TMDL**
 - D.O. Limits Cannot be Met in Hypolimnion
- **In-Stream Target Setting**
 - Based on Upstream Oligotrophic Lake but Applied to Downstream Reservoir
- **Strictest Effluent Limits in Nation**
 - Effluent Limits Apply End-of-Pipe
 - No Effluent Mixing Dilution
 - TP 0.010 mg/l
 - Below Limits of Treatment Technology
 - Treatment to 0.05 mg/l
 - Spokane County Regional Water Reclamation Facility
 - 8 mgd Membrane Bioreactor
 - P Load Offset by Nonpoint Source Reduction
 - Sewer and Eliminate 15,000 Septic Systems



Long Lake Reservoir, Spokane River

Industrial Discharge Permit Requirements

Special Conditions:

- Flow Monitoring: Continuous
- Sampling: Quarterly for BOD, COD, TSS, Total P, TKN, Nitrate-Nitrite, Oil and Grease, PH
- Slug Control Plan
- Total P - 14 lb/day

Costs:

- BOD - \$0.162/lb
- TSS - \$0.14/lb
- Flow - \$0.94/CCF
- Total P - \$3.09/lb
- Total N - \$0.37/lb



Pretreatment (On Site)

- Grease removal
- Screening
- Flow Equalization
- Dissolved Air Flotation Thickening
- Solids Handling
- Capital Cost ~ \$520,000
- Annual O&M Cost ~ \$270,000
- Phosphorus Removed ~ 16 lbs/day

Pretreatment (Off-Site)

- Ferric Addition
- Rapid Infiltration
- Effluent Filtration and Reuse
- Struvite Reactor
- Dishwasher Detergent Regulation

Pretreatment Off-Site

Recommended Alternative

- Ferric Addition
- Capital Cost ~ \$220,000
- Annual O&M Cost ~ \$75,000
- Phosphorus Removed ~ 195 lbs/day

Questions

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Existing Treatment System Decommissioning

