

# TAB 1

**POINT PAPER**  
**RE-RATE STUDY &**  
**WASTE WATER TREATMENT PLANT IMPROVEMENTS**  
**APRIL 28, 2008**

**PROBLEM:** The City of Palmetto has received correspondence from the Florida Department of Environmental Protection (FDEP) regarding the renewal of the permit for the Waste Water Treatment Plant (WWTP). The cost of the improvements is substantial, but must be scheduled for completion in order to renew the permits. A rate study is required to determine the appropriate revenue necessary to fund the improvements.

**BACKGROUND:** The City of Palmetto must renew its WWTP permit every 5 years. We have submitted our application to FDEP for renewal, and received a letter requesting additional information that, in general, is related to revising our groundwater monitoring plan to accommodate a reduction in allowable discharge and to reduce I & I.

In order to accommodate these reductions, the City must make a variety of improvements to the WWTP and to the Water, Sewer, and Stormwater systems.

In order to ensure the City's ability to fund the necessary improvements, the City should conduct a rate study, examining the cost of improvements and current revenue. It is also important to prepare a schedule for the completion of these improvements, so as to distribute the cost over a reasonable time period, while ensuring that the City meets the requirements of the permit renewal.

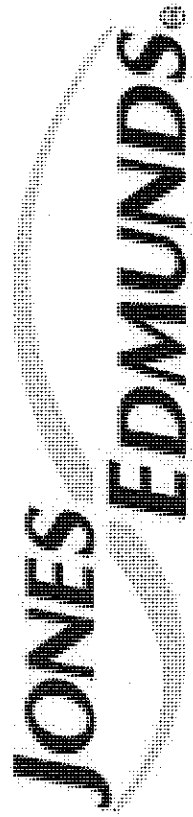
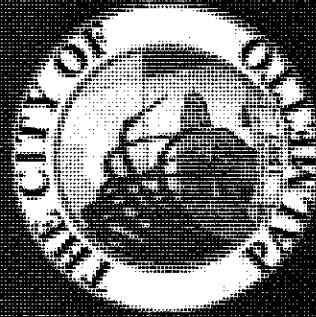
**Jim McLellan of Jones Edmunds will provide the City Commission with a cost analysis and presentation regarding the needed improvements and permitting requirements.**

# Palmetto WWTP

## Rerate & Repermitting Update

City Council Workshop

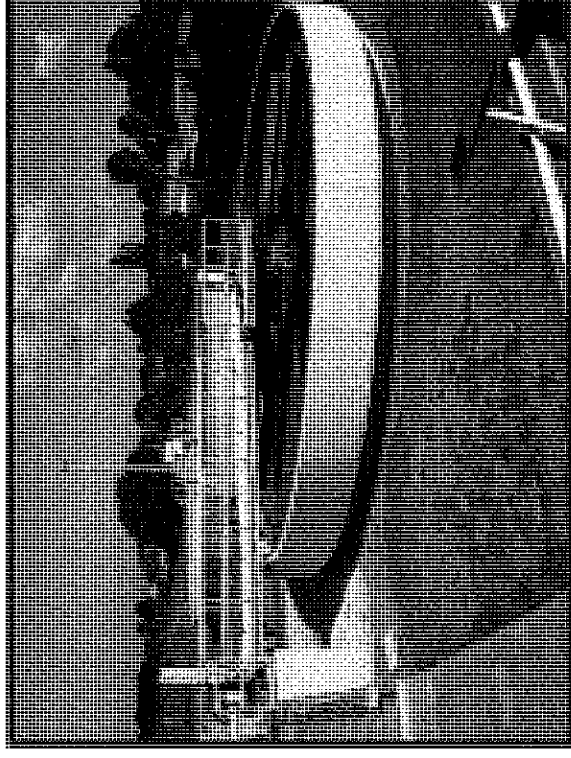
April 21, 2008



ENGINEERS | ARCHITECTS | SCIENTISTS

# Objectives

- Evaluate WWTP to assess ability to re-rate
- Determine what would be needed to increase capacity by 1.0 MGD
- Complete repermitting of WWTP with FDEP



# Re-Rate Study

- Existing WWTP Capacity = 2.4 MGD
- Want to see what is needed to get that to 3.4 MGD
  - Does the WWTP have reserve capacity  $>2.4$  MGD?
    - If yes, how much?

# Existing WWTP

INTEGRITY | KNOWLEDGE | SERVICE

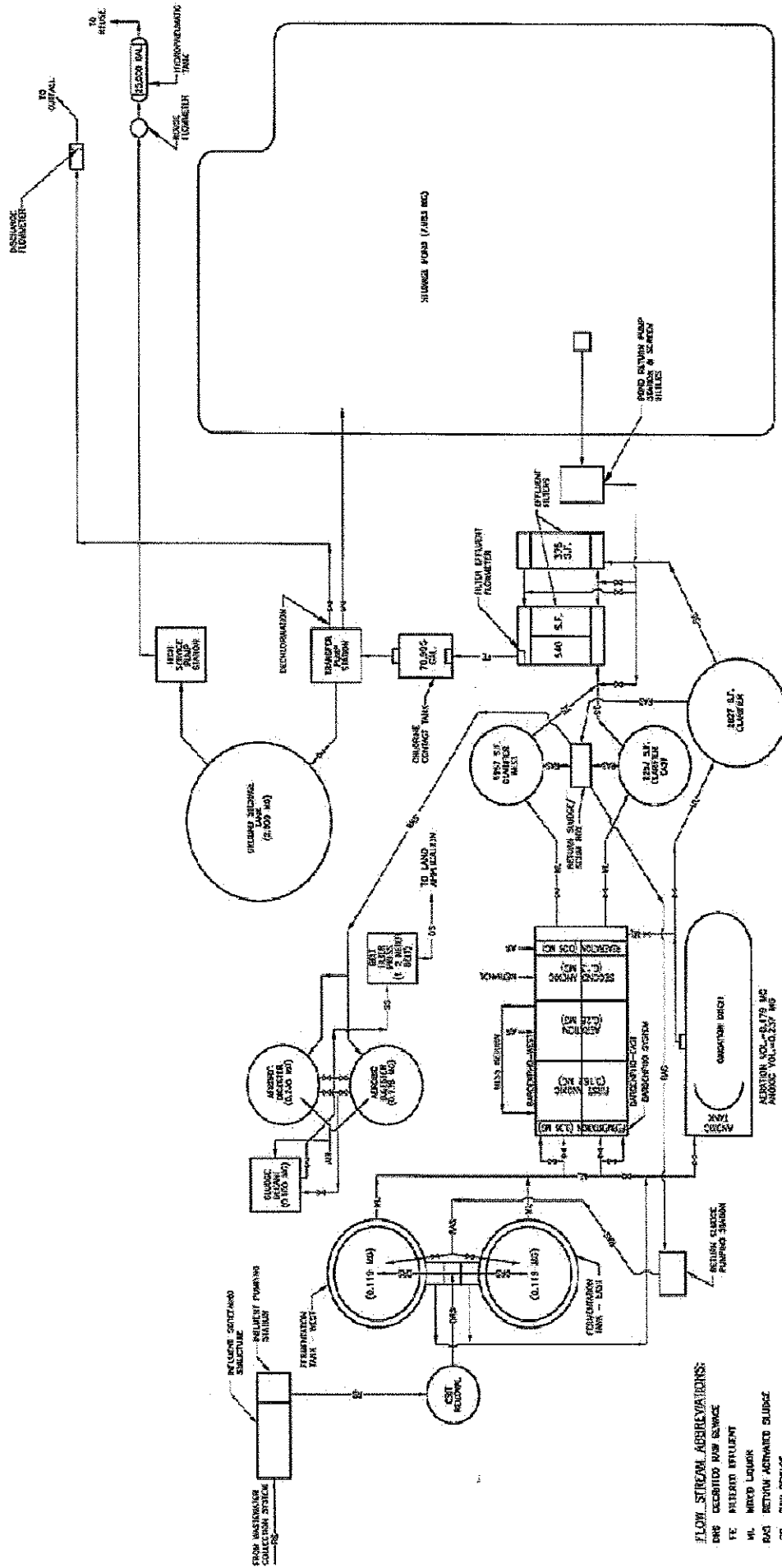


FIGURE 1  
PALMETTO WWTF  
PROCESS FLOW SCHEMATIC  
PALMETTO, FLORIDA

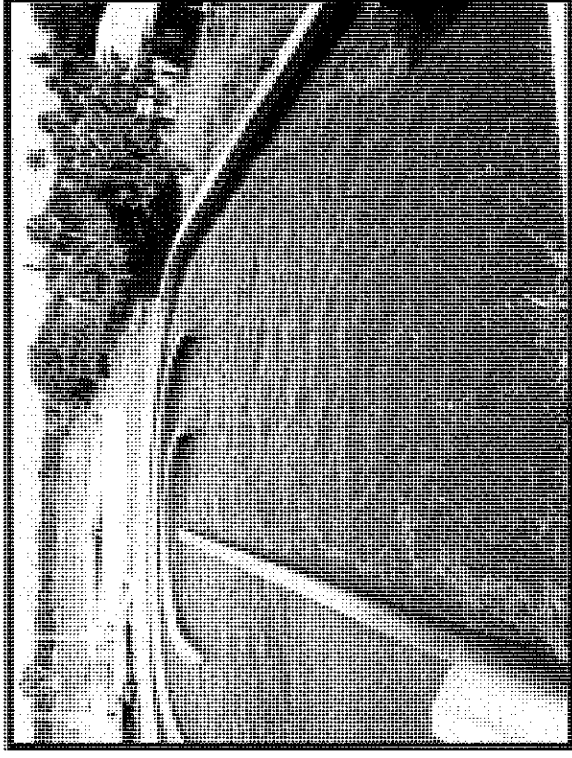
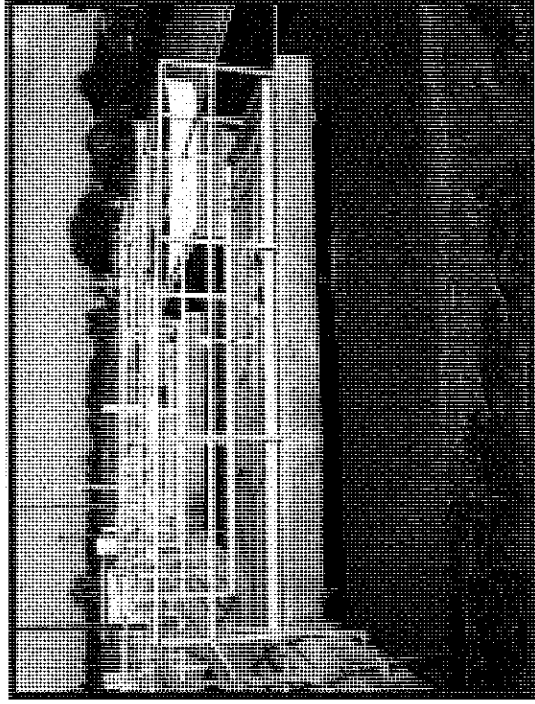
# Rerate Finds

- Ex. WWTP has no reserve capacity
  - Cannot re-rate plant without upgrades
- Main Limitations
  - Influent Lift Station
  - Grit Removal
  - Biological Process
  - Settling Tanks (Clarifiers)

# WWTP Facts

INTEGRITY | KNOWLEDGE | SERVICE

- 2.4 MGD Current Capacity (FDEP Permit)
  - Bardenpho Trains (2) = 1.4 MGD
  - Oxidation Ditch = 1.0 MGD





# Issues

- Plant has 3 treatment trains that operators must run as 3 separate units
- Capability of Oxidation Ditch to remove nitrogen is less than that of other 2 trains
- As flows increase towards WWTP capacity, ability to meet Nitrogen limit will become harder to do consistently

# Effluent Disposal

- 2 Permitted Disposal Methods
  - Discharge to Terra Ceia Bay
    - FDEP Permit = 1.4 MGD
  - Reuse System
    - FDEP Permit = 2.625 MGD
- LIMITATION: FDEP WILL NOT ALLOW CITY TO DISCHARGE >1.4 MGD TO BAY

# Implications?

- To increase WWTP Capacity, City will need to:
  1. Expand Reuse System Capacity and/or
  2. Find an Alternative Disposal to Bay

# Recommendations

- Improvements Completed in 2 Phases
  - Phase 1: Short Term Remedies
    - Things needed to address existing limitations
  - Phase 2: Plant Expansion
    - Things needed to achieve capacity of 3.4 MGD

# Phase 1 Improvements

- Upgrade Influent Pump Station
- Install New Grit Removal System Yard Piping Improvements
- Pursue Installation of a Deep Injection Well for Wet Weather Effluent Disposal
- Continue to Expand Reuse System

# Why a Deep Injection Well

- Eliminate Stringent Permit Requirements of the Terra Ceia Bay discharge
  - No more toxicity testing
  - No more copper/nickel concerns
  - Nitrogen limits would be easier to meet
- Any WWTP Expansion could be designed for less nitrogen removal

# Phase 1 Preliminary Cost Opinion

INTEGRITY | KNOWLEDGE | SERVICE

Influent Pump Station	\$735,000
Grit Removal System	\$440,000
Deep Injection Well	\$3,000,000
Permitting, Installation, & Pump Station	
Yard Piping Improvements	\$835,000
Electrical/Instrumentation	\$835,000
Subtotal	\$5,845,000
Contingency	\$1,155,000
<b>Total</b>	<b>\$7,000,000</b>

# Phase 2 Improvements

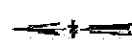
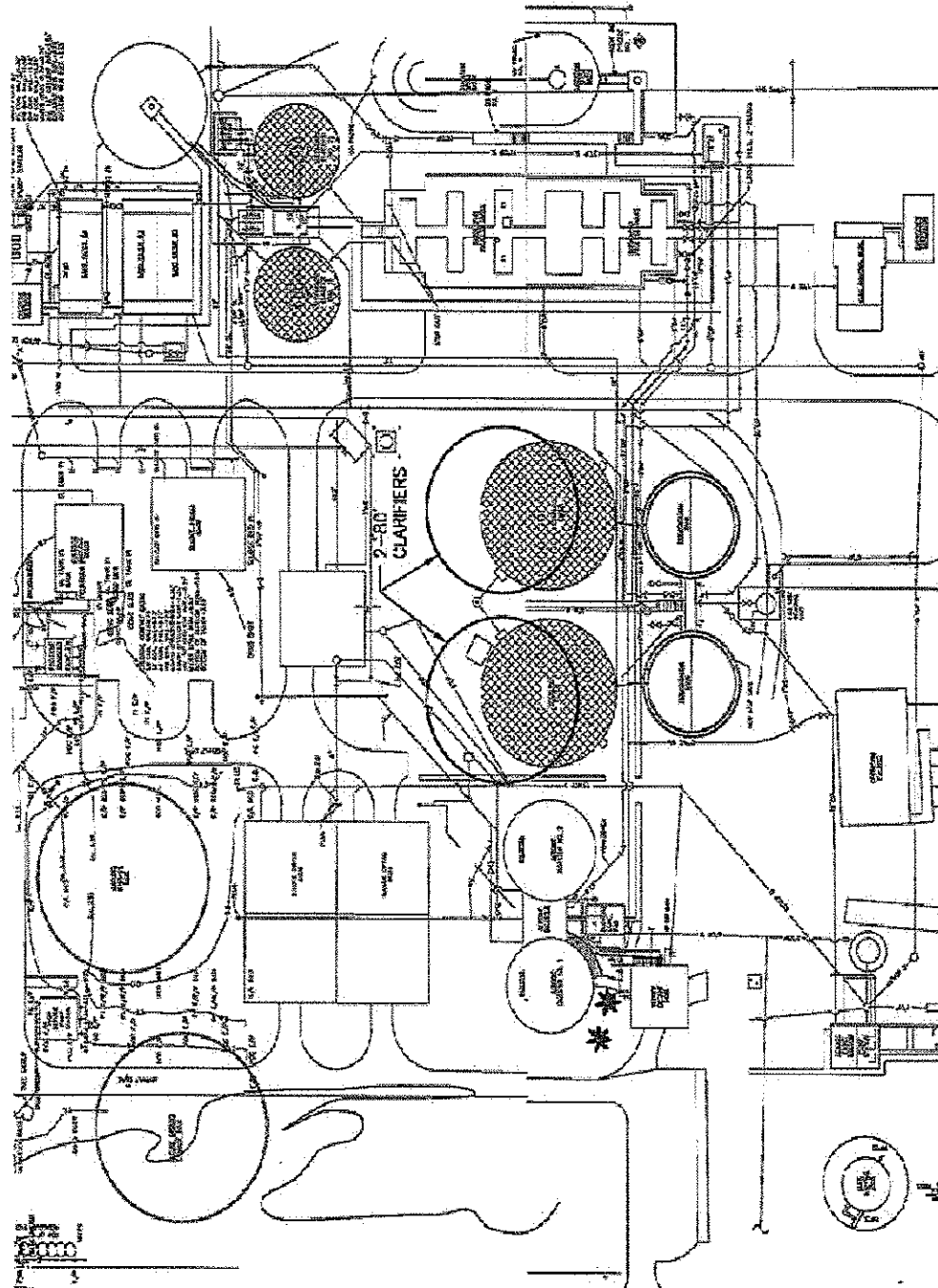
INTEGRITY | KNOWLEDGE | SERVICE

- Treatment Train Improvements
  - New Splitter Box
  - New Fine Bubble Diffused Air System/Blowers for Bardenpho trains
  - New Ox Ditch Aerator and Controls
  - Internal Recycle Pump Station for Bardenpho Trains
- Secondary Clarifier Improvements
  - New Split Box
  - Remove 40' Diameter Clarifiers and Old Trickling Filters
  - Install 2 New 80' Diameter Clarifiers
- Filter Improvements
- Expand Disinfection System
- Aerobic Digester Improvements
- Yard Piping changes
- Electrical/Instrumentation



# Potential Upgrades

INTEGRITY | RESPONSIBILITY | EXCELLENCE



GRAPHIC SCALE  
 0 30 60  
 SCALE IN FEET

LEGEND  
 REMOVE [cross-hatched box]  
 PROPOSED STRUCTURE [solid line]

FIGURE X  
 PALMETTO WWTF  
 80' CLARIFIER  
 PALMETTO, FLORIDA



# Phase 2 Preliminary Cost Opinion

INTEGRITY | KNOWLEDGE | SERVICE®

Treatment Train Improvements	\$1,065,000
Secondary Clarifiers	\$2,525,000
Filter Improvements	\$650,000
Disinfection System Expansion	\$470,000
Aerobic Digester Improvements	\$290,000
Yard Piping Improvements	\$1,000,000
Electrical/Instrumentation	\$1,000,000
Subtotal	\$7,000,000
Contingency	\$1,400,000
<b>Total</b>	<b>\$8,400,000</b>

# Repermitting

- Permit Application was filed within required timeframe
- Request for Additional Information received from FDEP
- Drafting Response to RAI