HARD COPY BAK.
C1 /3

Rachel

From: "Rachel" <rachel@peopleforpeople.com>
To: <mhutchinson@co.slo.ca.us>
Sent: Friday, January 30, 2009 4:51 PM
Attach: TricklingFilter.rtf; ENERGY.doc; Ag.doc; sucroseAltForMethanoZenon.JPG; Mara-RockFilters.JPG; bactp2.JPG; sludge430.gif; RockFilterBiblio1.JPG; RockFilterBiblio2.JPG; Crowley Treatment Ponds-Rice Capital Ponds.mht; microC.JPG; Columbia, IL - Official Website - Fish in Lagoon.mht
Subject: Comment on DEIR-Hard Copy to follow

Dear Mark

Attached please find Comment docs:

Trickling Filter on Ponds Odors Preposterous - comment

Energy (and other comments)

Ag Land Use

And attached material to these comments.

Mara Rock Filters and bibliography (University of Leeds)
Sucrose for Zenon
BactPur for Nitrification/Denitrification
microC
Sludge in California stats
Crowley Louisiana WW TPonds
Columbia IL fish in Lagoon.

I am leaving to drop off but fear I will be late with hard copy.
Thank you.

Reference:

All Comments Incoporporate by Reference the entire bibliography and document list for this project and EIR at the Project Website and for the Alternatives analysis.

This is printed one time and attached.

Submitted via email

Rachel Rosenthal

Los Osos

CA Architect Lic. no. 28278 (AZ no.27503)

CDPH Water Treatment Operator T2 no. 28798

CDPH Water Distribution Operator D2 no. 33794

B. Arch (5 yr, 1st Prof.) University of Arizona, Tucson, AZ

B. A. Classical Studies, Ancient Greek + English, University of Michigan, Ann Arbor, MI

email Jun 30 4:50pm

Rachel Rosenthal, Architect
PO Box 1678
San Luis Obispo, CA 93406

Friday, January 16, 2008 9 RaR

via email; paper copy via hand delivery

TO: Mr. Mark Hutchinson, Environmental Div Manager, San Luis Obispo County Public Works

RE: Draft EIR for the Los Osos Wastewater Project
Comment regarding legibility and length of the Document
and Request for Extension of Review Time for Public and Agencies

Dear Mark;

As you know. while reading and trying to respond to the Los Osos DEIR, I have been distracted by the lack of editing, redundancy and improper use of external text in the document.

In increasing desperation and waning humour, I began writing you emails in the hope you would see for yourself the impossible text and hire an Editor.

I wrote you from pure heart and mind, from my isolated study.

I was not aware of page limits and words like "filler" when earlier lamenting that the DEIR main document could be two inches thick instead of six, if properly edited.

But just now, after brief research online, it seems my thoughts and words are almost verbatim the words of the State CEQA Guidelines and CEQA itself.

It is indeed part of Law that EIRs must be legible, comprehensible, concise, of prescribed length, internally consistent, without "filler", clear in disclosure and citation, "so that decision-makers and the public can rapidly understand the documents".

Art 10. Sec 15140; CEQA Guidelines [http://ceres.ca.gov/topic/env_law/ceqa/guidelines] :

Article 10. Considerations in Preparing EIRs and Negative Declarations

Sections 15140 to 15155

15140. Writing

EIRs shall be written in plain language and may use appropriate graphics so that decision-makers and the public can rapidly understand the documents.

Note: Authority cited: Section 21083, Public Resources Code; Reference: Sections 21003 and 21100, Public Resources Code.

15141. Page Limits

The text of draft EIRs should normally be less than 150 pages and for proposals of unusual scope or complexity should normally be less than 300 pages.

Note: Authority cited: Section 21083, Public Resources Code; Reference: Section 21100, Public Resources Code.

15148. Citation

Preparation of EIRs is dependent upon information from many sources, including engineering project reports and many scientific documents relating to environmental features. These documents should be cited but not included in the EIR. The EIR shall cite all documents used in its preparation including, where possible, the page and section number of any technical reports which were used as the basis for any statements in the EIR.

Note: Authority cited: Section 21083, Public Resources Code; Reference: Sections 21003, 21061, and 21100, Public Resources Code.

The Guidelines say an EIR is a "public disclosure document".

San Diego County (DPLU June 2004) "Guidance for the Writing of Draft EIRs" (pdf p 5/47) interprets the CEQA Guidelines and Code, and states:

"The length of draft EIRs must be kept to the absolute minimum." and:

"Extraneous and 'filler' material must always be omitted from EIRs."

[See: http://www.co.san-diego.ca.us/dplu/docs/EIR_FORMAT.pdf]

and [attached image 'SDCO-DEIRmustbekepttomin.JPG' showing part of pdf p 5]

I visited briefly with the Consultant representative at the Monday night meeting.
I tried to ask questions and explain my comments about those pages.

He seemed defensive and did not seem to wish to discuss (real or perceived) problems in composition.

I am not an idle critic. These events are jolting my memory back to a time when I wrote much lauded research, papers and Commentary at University in Literature, Classical Studies, and Con Law.

I do not want to hurt anyone's feelings, nor slight so much hard work and accomplishment (as in the DEIR) - but the County must do something to Edit this DEIR at no additional cost to Taxpayers or Los Ossians.

There are few times I am close to certain about anything on Earth.

I am certain of the degree of obfuscation evidenced in the Los Osos Draft EIR;
that the DEIR body is almost 500 pages of bloat instead of the statutory minimum 150 / 300 pages;
that the portions that are incomprehensible to the public due to distraction are critical sections - not supplementary analysis of a technical nature.

[as in: http://ceres.ca.gov/ceqa/cases/1987/sf_reasonable_growth_081087.html]

In the County - Consultant Contract, please see:

Feb 5 2008 BOS Archives;
"Agreement For Environmental Consulting Services" (F1-10) pdf p10/60; ref. to Scope of Work Exhibit A and:

13 "Compliance with Laws";
27 "Quality Control and Quality Assurance";

and in Exhibit A: Scope Of Work:

(F1-22): (pdf p 22/60):

"Report format and content will be in full compliance with CEQA, the State CEQA Guidelines, and County's CEQA compliance procedures and specifications as well as compliance with NEPA guidelines for use by any federal agencies as identified in the request for proposal. ...
Text will be supplemented with graphics and summary tables to present information in a concise and easily understood format."

(F1-33): (pdf p 33/60):

"TASK 5: Administrative Draft EIR

The MBA Team will prepare the ADEIR, which will consist of the main document and the appendices. The main report will be a concise approximately 150 page document that summarizes the information contained in the appendices. ...To accompany the main document, the MBA Team will prepare a separately bound Executive Summary of approximately 25 pages."

Then see the Fee Table (F1-41, 42) (pdf p41-42/60) ...
Our money is represented in those Tables. Just as with the Carollo Tech Memos, my heart is sick.

It is impossible to understand how this DEIR document came to be, reviewing the Work Plan. One must wonder: Where were the other well paid Environmental Consultants or the County's Project Manager (your extra eyes and brains) during the "Administrative Draft" phases?

But now, for a citizen responding to the DEIR, there is so little time to read, write and to also wade through the extraneous verbiage.

I hope the County will find a way to edit the Draft EIR and also to extend the Review time for the public; the Law sought to protect us and the CEQA process, but in this case failed.

Thank you so much for your hard work for all the County and the Los Osos Project.

Good Luck.

Respectfully;

Rachel Rosenthal
Los Osos

CA Architect Lic. no. 28278 (AZ no.27503)
CDPH Water Treatment Operator T2 no. 28798
CDPH Water Distribution Operator D2 no. 33794

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cc
Paavo Ogren, Director, San Luis Obispo County, Department of Public Works
Supervisor Bruce Gibson, Chairperson, San Luis Obispo County, Board of Supervisors

http://www.co.san-diego.ca.us/dplu/docs/EIR_FORMAT.pdf

GENERAL ISSUES AND GUIDANCE FOR THE WRITING OF DRAFT EIRs

1. CONTENTS:

- The contents of an EIR required by the CEQA and the State and County CEQA Guidelines are hereby incorporated by reference.

2. FORMAT:

- Unless an exception is granted, every draft EIR shall have the components as shown on Pages 4 and 5 of this document and as detailed in the following pages.
- **DOCUMENTS THAT DO NOT CONTAIN ALL OF THE MANDATORY SECTIONS DESCRIBED IN THIS DOCUMENT WILL NOT BE ACCEPTED FOR REVIEW BY COUNTY STAFF UNLESS AN EXCEPTION IS GIVEN BY THE DIRECTOR OF THE DEPARTMENT OF PLANNING AND LAND USE (DPLU).**

NOTE: The format and content requirements of Supplemental EIRs will be determined on a case-by-case basis from the components listed on pages of this document.

3. DOCUMENT LENGTH:

- The length of draft EIRs must be kept to the absolute minimum. The document shall be only as long as required to accurately convey the pertinent issues and to contain the level of analysis required to legally comply with the CEQA.
- Extraneous and "filler" material must always be omitted from EIRs. The total length of the narrative portion of the draft EIR must be kept below 100 pages. **DRAFT EIR NARRATIVES THAT EXCEED THIS PAGE LENGTH LIMITATION WILL NOT BE ACCEPTED FOR REVIEW BY COUNTY STAFF UNLESS AN EXCEPTION IS GIVEN BY THE DIRECTOR OF THE DPLU.** Although exhibits and tables are page numbered, they are excluded from the page limitation. Appendices are also excluded. (State CEQA Guidelines* §§ 15006, 15141, 15147.)

4. EDITORIAL MATTERS:

- It is expected that the draft EIR will be properly edited for correct format, spelling, grammar, page numbering, internal consistency and other editorial matters. The draft EIR must be prepared in a clear format, written in clear language for review and understanding by decision-makers and the public.

* - 14 Cal. Code Regs. § 15000 et seq.; hereinafter all section references are to the State CEQA Guidelines.

AG-Land Use-Coastal Act-Water Quality-Disposal-ReUse-BIOLOGY

Appendix M - Agriculture.
The Ag issues of the proposed projects are most important.

Please explore further the definition of AG land use and impact of the Alternative Treatments.

Two of the Treatment Facilities that would be located on Ag Land are Oxidation Ditch/Biolac.

These are more traditional mechanical type plants-with sludge aerobic digestion, "thickening", handling and sludge haulling,and use of chemicals (coagulants:Alum/Ferric Sulfide/polymers).

These have buildings for hiding and storing the sludge and concrete built facilities and power houses etc.-like factories.

The third Treatment Alternative is the Pond System - a Natural system.that uses Rock Filters (Carbon from Limestone, Bio augmentation with cultured bacteria for nitrogen removal and algae control) in maturation / polishing ponds.

There would only be a small building for blowers in the Pond Alternative and the inlet pumps, septic receiving.

The ponds become aquaculture environements such as in the Louisiana Project
I attach and at Columbia IL where native fish are grown ajacent to the Missippi River....

SEE:

http://crowley-la.com/GOVERNMENT/DEPTwater.html

and link to the fish release in Columbia Ill Ponds that employ the Nelson ADS Pond system

http://www.columbiaillinois.com/index.asp?NID=140

Could the EIR study explore the Pond Treatment Alternative and accompanying Reservoirs as more closely related to an Ag use of the Land and thus NOT count the full loss of acreage with this Treatment Alternative in the same way as the other two?

Similar to Dairy Farm waste control?

What is the difference between the Wastewater Ponds for the Los Osos Project and the typical Wastewater Lagoon allowed under normal Ag Use for Dairies or wineries for example or aqua culture farms......?

Also the Ponds do not have Sludge Processing or Sludge Hauling and Storage buildings.....
Only possibly after twenty to even sixty years and perhaps never.

Perhaps this should be considered in the analysis of impacts and harmony with Ag Land Use?

Further perhaps the future potential for Pond Technology harmonious with Ag Use
and VISUAL IMPACTS could be explored in the EIR a bit better?

Perhaps the future Project could be an asset to Agricultural Economy in the Valley.
The DEIR in the Ag Impacts contain statistics on the Revenue produced by the small farm in SLO County. It says 50% of the famrs have Revenue less the $25,000 per years.

That 90% of Farm Sales is by some small –12% of the farms in the County.

If the best pond designers and technology could come to our
Los Osos project - maybe in the future we could have a learning center for technology transfer and application for all of Ag.

Perhaps we could have a small farmer survival learning center?

In addition to spray fields all over , maybe we could have an irrigation learning center?

Perhaps a learning center for Water reuse with water quality testing for farmers that may want to consider Ag Reuse but want a place to explore the idea first.

For wineries, for dairy and livestock....

Please consider not considering the Pond Treatment Alternative as the same acreage removal of Ag Use as the other two.

Please explore the traditonal Ag Landscape that often went hand in hand with Water Reservoirs and Pond Treatment under Visual Analysis.

Please explore the possible threats from Chemicals to the Warden Lake versus The Pond Alternative that would not have the threat of polymer spills such as happened at the Lopez water Treatment site.

Please review the fish cultures at the Columbia IL Ponds along the Missippi River and The Louisiana Ponds and other case studies and possoble potential for harmony with The habitat of Warden Lake.

2. Land Use - Ag Impacts
Please evaluate the impacts if the AG land were sold and developed as an Ag Cluster.

Is there a similar property in our County that has done this?
Could we compare the impacts?

Or a farm with an event Center?

Would either of these be allowed if the property were purchased by others and the penalty for removing from Williamson Act paid by the new owner?

3. REUSE -DISPOSAL -AG USE

Finally if the ag properties along the LO valley need or want to reuse the water from the plant - please explore what is best for the Ag community whether water with treatment chemicals is worse than water treated in a Natural Pond System without polymers and coagulants and such?

Is the availability of recycled water an asset to the local farmers who are now often needing to use RO systems or sometimes affecting each other's pumping (as in Los Osos Creek area).?

I myself dream of farming one day in that valley.

I would not accept reclaimed water from the Alternatives 2/3.
I would accept the water from the Ponds Treatment alternative knowing it does not involve polymers and treatment chemicals.

I would not want to buy Ag land or lease it if it were near a Mechanical Plant and a Sludge Processing facility.

The Pond Treatment Alternative does not have these components.

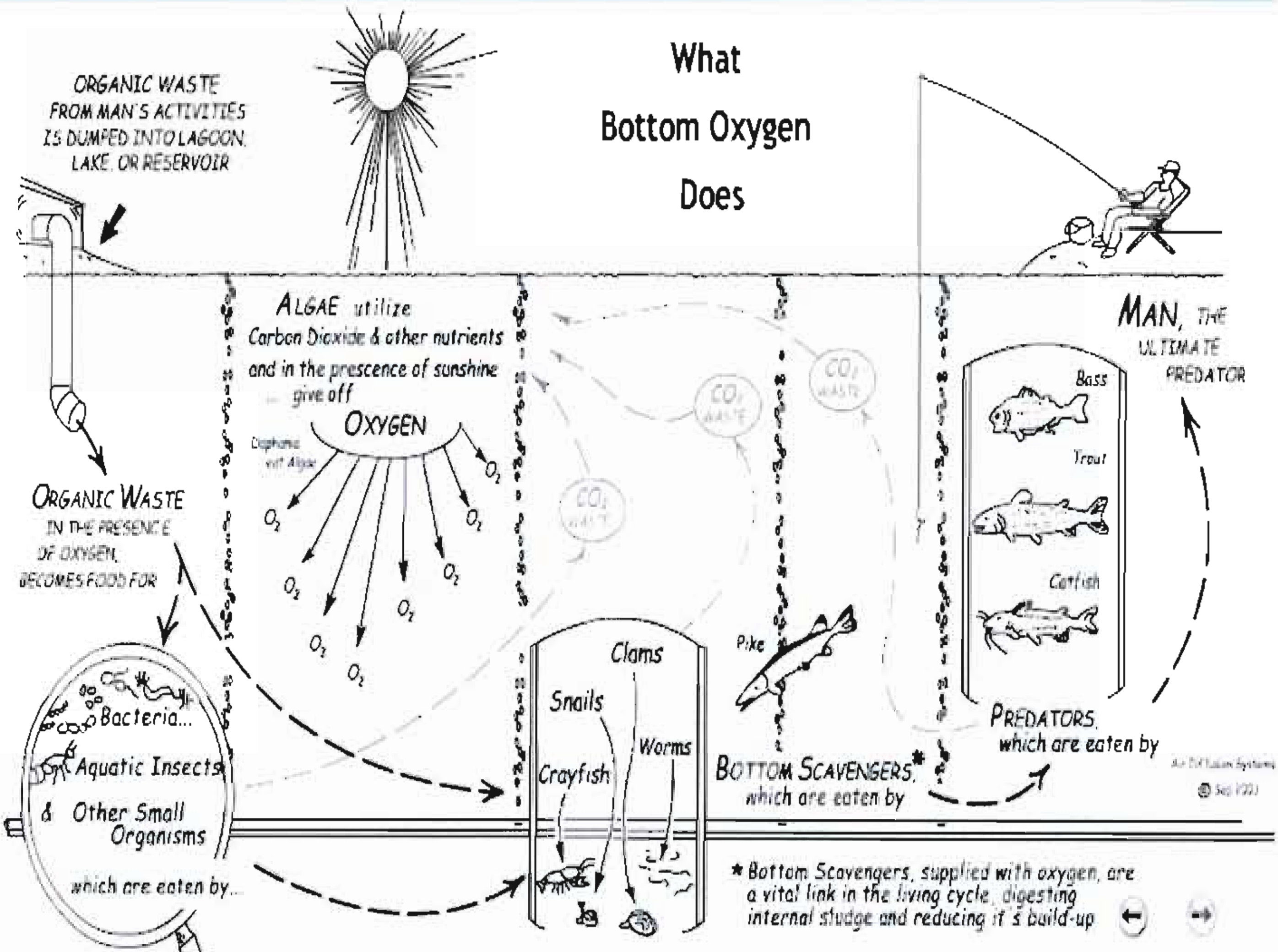
Perhaps the other farmers feel the same way?
Has the County interviewed the farmers as the Ripley Team did?
Did not the County review the requests by Organic Farmers for more data?
Could the EIR review this ?

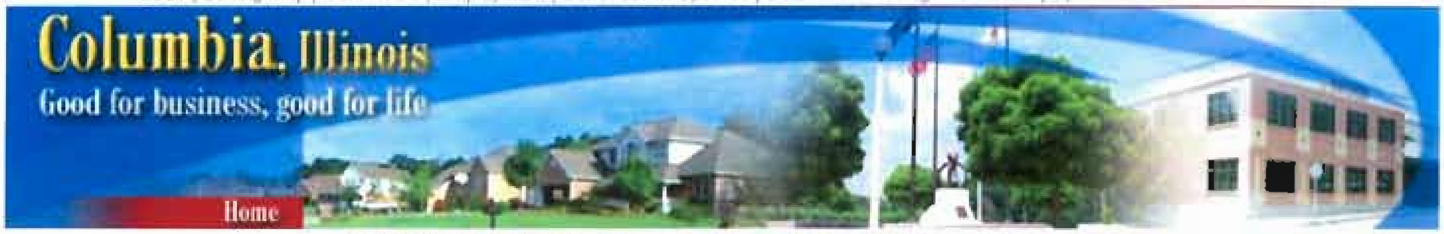
Submitted:

Rachel Rosenthal
Los Osos

CA Architect Lic. no. 28278 (AZ no.27503)
CDPH Water Treatment Operator T2 no. 28798
CDPH Water Distribution Operator D2 no. 33794

B. Arch (5 yr, Ist Prof.) University of Arizona, Tucson, AZ
B. A. Classical Studies, Ancient Greek + English, University of Michigan, Ann Arbor, MI


What
Bottom Oxygen
Does
ORGANIC WASTE FROM MAN'S ACTIVITIES IS DUMPED INTO LAGOON, LAKE, OR RESERVOIR
ALGAE utilize Carbon Dioxide & other nutrients and in the prescence of sunshine ... give off
OXYGEN
O_2
CO_2 WASTE
ORGANIC WASTE IN THE PRESENCE OF OXYGEN, BECOMES FOOD FOR
Bacteria...
Aquatic Insects
& Other Small Organisms
which are eaten by...
Clams
Snails
Worms
Crayfish
Pike
BOTTOM SCAVENGERS* which are eaten by
Bass
Trout
Catfish
PREDATORS, which are eaten by
MAN, THE ULTIMATE PREDATOR
* Bottom Scavengers, supplied with oxygen, are a vital link in the living cycle, digesting internal sludge and reducing it's build-up



Columbia, Illinois Releases Fish Into Lagoon

We released native species fish (Bluegills, Fathead Minnows, and Triploid Grass Carp) into our lagoons on April 24, 2007 to show how higher life forms can survive and consume waste the "natural way".

Completing the "food-chain" is part of the engineering design for wastewater treatment in lagoons by Air Diffusion Systems. Every pound of fish growth is a pound of waste processed- starting with bacteria, then rotifers & crustaceans and finally fish, harvesting snails, worms, and other aquatic life in the aerated lagoon system. After all, we are not feeding them anything, and they grow like crazy.

Should they escape into the Mississippi River, we are restocking the waters with native species. Below are a few photos of this event and, remember, fish are a great indicator of the health of the lagoons.

Bluegills are 2 to 4 inches and will grow to 8 to 10 inches within a year.

Fathead Minnows are about 100 to 150 fish per pound of weight.

Aquaculture and Fish Treatment

Whether you raise catfish, prawns, minnows, trout, bass or any other type of aquatic life, you can double your fish production using an ADS system. Since all levels of water are made livable, stocking density can be based on acre-feet of water instead of surface-feet. You'll eliminate oxygen deficiencies during periods of extreme heat or freezing weather. Fish mortality and disease can be reduced to less than 10% by combining an ADS system with biofiltration and bioaugmentation of beneficial bacteria.

COVER·STORY

Innovative Wastewater Treatment

"Wastewater that has been treated and filtered through the local system is actually cleaner than the natural bayou water it ultimately flows into."
--Jean Simon

Crowley Facility Ranks Among Largest Systems of Its Kind

By Charles East, Jr.
Photos by David Humphreys

ASK A SOUTH LOUISIANIAN what the city of Crowley is famous for, and you'll probably be told it's the "Rice Capital of America." But Crowley has also earned its own identity in environmental circles: the city's innovative wastewater treatment facility is one of the largest combined "artificial marshrock/reed filter" systems in the world.

This emerging technology, also known by the terms "microbial rock filter" system and "constructed wetlands," features a large pond for municipal wastewater and storm-water storage and preliminary treatment, as well as a natural filter.

The filter consists of a shallow basin filled with rock, on which plants --- in Crowley's case, southern giant bulrush are grown. The plant roots are presumed to provide additional treatment by taking some nutrients from the wastewater and by introducing oxygen into the wastewater flow.

The Crowley facility was built at a cost of $3.76 million and funded by a construction grant through DEQ using U.S. Environmental Protection Agency (EPA) funds, as well as local monies.

The system began operation in June 1992. It is classified as innovative because it relies on technology that has not been proven fully and because it is designed for low energy consumption, utilizing natural treatment processes and wind-driven aeration.

The cost savings on electricity and other utilities are noteworthy. Crowley's previous plant, a mechanical operation, experienced total utility costs of about $2,500 or more per month. The average monthly utility bills for the new wastewater treatment facility have totaled only about $130.

Because the artificial marshrock/reed process practically eliminates the need for chemical or mechanical means of treatment and usually incorporates gravity flow throughout most of the system the operation and maintenance costs are substantially less than those experienced with conventional treatment processes.

Including the price of land, Crowley's new facility cost less than a new mechanical plant would have. Mayor Robert Istre and the Crowley City Council solved several problems by going to the artificial marsh-rock/reed system: (1) They closed an old treatment plant, located in a residential area, that emitted bad odors and attracted gnats, flies, and mosquitoes. (2) They now meet more stringent discharge permit requirements for less than the cost of typical plant construction. (3) They reduced maintenance costs for wastewater treatment. (4) The city doesn't have to process and dispose of sludge off-site; instead, solids form in a thin layer at the bottom of the treatment system pond and don't need to be removed for many years: perhaps as long as a century, according to project engineers. (5) And Crowley has an environmentally friendly facility that is being studied for use in establishing uniform design criteria for future treatment systems.

It should be noted that artificial marsh-rock/reed filter systems of this size are relatively new technologies and are not fully accepted by some experts in the wastewater industry. Strong opinions on both sides of the issue have demonstrated the need for further study. Nevertheless, some wastewater treatment system designers are convinced of the merits of the process and continue to design and build more systems of this kind. Crowley's treatment system includes the following components:

An aerator in the facultative pond

- **FACULTATIVE POND** The oxidation pond covers 78 acres and contains 10 aerators, which help pump dissolved oxygen into the water and also maintain an even mix of solids suspended in the water within the pond. These aerators are wind-driven, with an electric motor backup for periods when there is not enough wind. The pond provides primary treatment and includes capacity for storm-water storage during wet weather (25 million gallons per foot of storage in the pond above the normal operating level). Organic and inorganic matter, otherwise part of a sludge disposal problem, will settle on the bottom of this pond and remain there for an estimated 100 years before requiring removal.

- **OPEN MARSH AREA** The open marsh, which spans more than 22 acres is planted with southern giant bulrush and covered with duckweed floating on the surface.


Helpful marsh vegetation.

The combination of windscreen from the bulrush and shade from the duckweed is intended to reduce the algae in the wastewater -- after the water migrates from the pond -- and to provide additional treatment. Algae is reduced because the duckweed prevents sunlight from reaching the water, partially cutting off photosynthesis and major oxygen production. Algae will otherwise cause high concentrations of total suspended solids in the discharge.


Bulrush is prominent at the acility.

we covered use polyethelene balls see

A green blanket of duckweed covers the water's surface in the open marsh area (above left), while a close-up view (above right) shows the texture of the duckweed. Algae is intentionally reduced in Crowley's wastewater treatment facility, as the duckweed prevents sunlight from reaching the water; this paritaly stops photosynthesis and major oxygen production.

- **TORPEDO GRASS BUFFER AREA** This buffer area is about seven-tenths of an acre and is intended to filter any duckweed that may spill out of the open marsh area. It also includes two aerators to ensure adequate dissolved

oxygen in the wastewater that enters the microbial rock filter.

The microbial rock filter, made of limestone.

- **MICROBIAL ROCK FILTER** The filter, covering 18 acres planted with southern giant bulrush, is designed to provide final "polishing" of the wastewater. About 18 inches thick, the filter consists of individual pieces of large limestone rock. This layer is separated from the ground by a liner made of polypropylene mesh.
- **ULTRAVIOLET DISINFECTION** This method of disinfection was selected to meet the permit fecal coliform bacteria limit because it was more cost effective than chlorination and dechlorination.

Changing an ultraviolet bulb

- **RECIRCULATION SYSTEM** A single pump capable of delivering approximately one million gallons per day was recently added at the post-aeration basin, the treatment unit that receives water after it is disinfected. One purpose of this pumping system is to recirculate the treated water to the facultative pond in periods of low flow. This provides a means of constantly delivering adequate amounts of water to the artificial marsh and rock-reed plants, even during periods of relatively dry weather. The recirculation system also allows the operator to break up stagnant zones in the facultative pond that could otherwise cause odor problems.

The artificial marsh-rock/reed filter system is essentially a controlled natural process for the secondary and tertiary treatment of wastewater following primary treatment in the oxidation pond, according to project engineering consultant Tim Mader of Mader-Miers Engineering, Inc. in Lafayette.

Fred Trahan, project engineer with the firm, says the system treats water in much the same way as a natural stream, in which the action of the water flowing over the rocks in the stream bed -- combined with the aquatic plants' absorption of dissolved nutrients gives the water a purity and clarity.

In fact, Crowley Wastewater

Click for full-size photo (242K).

Superintendent Jean Simon says the wastewater that has been treated and filtered through the local system is actually cleaner than the natural bayou water it ultimately flows into.

To arrive at that clean, filtered stage, the Crowley wastewater goes through a treatment process lasting about 60 days, Simon explains. (See diagram) Wastewater enters the system at the inflect area and is forced hydraulically and encouraged -- through the action of aerator/mixers to move out and around a fingerlike peninsula before traveling back down toward the effluent exit. This phase lasts a minimum of 52 days, Simon says.

After leaving the main pond, the water travels by gravity into four shallow marshes, where it remains for a minimum of three days. It then travels to the rock/reed filter area, taking about two days (under present flows) before passing through to the ultraviolet contact chamber for disinfection. Finally, the water proceeds to the post aeration basin -- equipped with its own aerator -- before discharge into Bayou Placeman Brule. The bayou empties into the Mermentau River.

During periods of hot and dry weather, Mader says, it is possible with the recirculation system for the Crowley treatment facility to function for days without any discharge into the receiving bayou.

"DEQ is highly appreciative of the leadership and cooperation shown by Mayor Istre, the City Council, and their staff in bringing about this new system," says Dale Givens, Assistant Secretary for DEQ's Office of Water Resources. "We applaud the steps they are taking to improve Crowley's wastewater collection and treatment."

Local officials are justifiably proud of the innovative system. In fact, tours of the facility can be arranged by contacting the City of Crowley.

Louisiana Environmentalist
July - August, 1993.

Return to the Cover Stories Table of Contents Page

Return to the Louisiana Environmentalist Magazine Home Page

ENERGY

ENERGY –GHG – AIR QUALITY - PUBLIC HEALTH

The GHG Analysis had errors due to conversion mistakes and also gross violations of CARB Protocol documented in earlier Comments from this Commenter.

It was pulled from Review announced by an email from the Environemental Coordinator of the LO DEIR and as of January 30 2009 has not been redone.

Please provide an Addendum to this DEIR that provides proper GHG and ENERGY analysis for the Alternatives. Separate Energy Analsis from GHG Analysis.

Please respect CARB open source protocol and its incorporated protocols of other organizations: WRI Project Method and IPCC protocol.

Even as completed for the DEIR other Problems existed that violate various California Codes and Planning Law: CEQA, Appendix F and the Coastal Act requirements to minimize Energy consumption.

Please provide a proper separate Energy analysis under CEQA Appendix F:

The LO DEIR embeds the Energy analysis in the GHG review.
The GHG Review is further embedded in a confusing Air Quality Analysis.
The LO DEIR confuses the Public and evades any real ENERGY Use comparison.

The GHG GAMES the outcomes by introducing random elements into the Pond Treatment Alternative that do not exist in reality.
(Methanol in GHG analysis, Trickling Filters in Odors, Algal sludge which is not produced by Advanced aerated Pond Treatment Designs of the last decade).

EXAMPLES:

OX Ditch/ Biolac Treatment use much Energy for the much reviewed "Biosolids Processing and Hauling" - this is masked in the GHG analysis.

The Pond Alternative DOES NOT produce Sludge or Biosolids and does not use the Energy in processing and hauling.

The Executive Summary 2.4.2 - Wastewater Treatment Process and Solids Processing p 2-10
does NOT make clear that the Ox Ditch/Biolac Alternative produces 4000 lbs – 2 Tons of sludge per day. (1000 lbs with a Step Collection system)

The Pond Treatment Alternative does not produce biosolids.

The Exec Summary and other sections go on about the problems with Algae.
The Exec summary discusses Sludge from Algae.

Algae is a problem in older traditional Pond Treatment or poorly maintained systems.
NOT THE ADS or newer designs that use Aeration, Bacteria and bio augmentation, Pond Covers
And various well documented means in practice to control Alge growth.

The PONDS would use less Energy than Ox Dittch/ Biolac in a proper review of Solids Handling.

Please show a Breakdown of all Processes and Energy Use of Components and fuel source. SEPARATE Collection from Treatment .

Please review + clarify the different Pond type for Algae. Please review + correct the Pond TM data the bibliography shows no proper literature review was done for advanced aeration, Rock Filters and algae in modern Pond Systems.

California CEQA Appendix F Goals:

"The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

(1) decreasing overall per capita energy consumption,
(2) decreasing reliance on natural gas and oil, and
(3) increasing reliance on renewable energy sources."

"Appendix F: Energy Conservation., CA Environmental Quality Act"

The large area of the Tonini site, its South facing slopes and the lower overall Energy use of the Pond Treatment alternative would show that Project 4 could be a self sustaining Energy User by putting solar panels at the site in future years or as funds are available.

Workshops at the PGE energy Center and elsewhere teach how to find grants and other means to aquire solar panels and small wind and hydro Energy sources (renewable) for this project in its various forms.

(2002 June 25, Pacific Gas and Electric Company: Self Generation Incentive Program Workshop]

and

"E. Alternatives should be compared in terms of overall energy consumption and in terms of reducing wasteful, inefficient and unnecessary consumption of energy."

"Appendix F: Energy Conservation., CA Environmental Quality Act"
http://ceres.ca.gov/topic/env_law/ceqa/guidelines/pdf/appen_f.pdf

Please include an analysis of Alternative Energy use possibilities in the Project.

Please remove Gaming of the outcomes:

This means not making Design decisions that would not be made at this early Phase to game the outcomes of analysis.

The Project Pre Design Engineer CHOSE METHANOL for the Pond Treatment alternative.
NO NATURAL SYSTEMS DESIGNER WHO DESIGNS POND TREATMENT WOULD USE METHANOL, A KNOWN TOXIN AND HAZARDOUS MATERIAL IN A POND TREATMENT DESIGN.

Pond Designers use Natural components (BioAugmentation and Rock Filters) to provide Carbon Sources to Processes. Even traditional designers are eliminating the use of the known toxin Methanol.

See ZENON Bio membrane literature for the alternative use of SUCROSE instead of Methanol; or the many studies comparing Molasses as a Carbon Source to Replace Methanol in various traditional Mechanical Treatment and filtration systems.

The GHG analyst then BROKE PROTOCOL and boundaries in the GHG analysis to include Energy Consumed in Chemical Manufacturing and transport.

AB 32 California requires reduction of GHG emissions.
GHG review of a "project" should inlude CARB adopted protocol and the embrases and adopts inturn "protocols" of the IPCC and the World Resources Inst. (WRI)

Presentation of the Green House Gas Study under CEQA for local entities is left to the discretion of the Lead Agency and Local Entity according to the latest opinion of California Office of Planning and Research.

But this is no excuse for not including the Energy analysis and a clear, transparent GHG analysis.

There is much confusion among the Public between ENERGY and Greenhouse Gas Emissions.
This is common even among a highly educated Public (and Environmental Professionals)

If the identical amount of electriciy is consumed by different wastewater plants in equiv B T U or equiv KwHs consumed:

if one Electricity Source uses Coal as fuel and the second uses Natural Gas and a Third Uses Solar Thermal Plant and a fourth uses OnSite Solar Panels;

Each will consume the same KwHours of Electricity.

Each will have a very diffeent GHG emission in CO2eq.

Each will have very different Air Quality Impacts.

Reference:

All Comments Incoporporate by Reference the entire bibliography and document list for this project and EIR at the Project Website and for the Alternatives analysis.
This is printed one time and attached.

Submitted:

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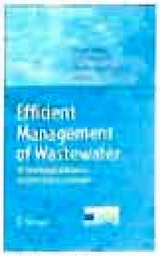

large version

Waste Stabilization Ponds: A Highly Appropriate Wastewater Treatment Technology for Mediterranean Countries

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Efficient Management of Wastewater
Its Treatment and Reuse in Water-Scarce Countries

10.1007/978-3-540-74492-4_10

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This chapter describes waste stabilization pond (WSP) systems for wastewater treatment. WSP systems comprise a series of anaerobic and facultative ponds and sometimes maturation ponds. Rock filters can be used instead of maturation ponds and they can be aerated to remove ammonia and to improve biochemical oxygen demand and suspended solids removals. Effluent quality is high, and properly designed and well maintained WSP systems produce effluents that can be safely used for both restricted and unrestricted crop irrigation.

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Fulltext Preview (Small, Large)

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Source Zenon: ZeeWeed Biomembrane

Designs to meet your needs: Proposed West Virginia limits

- **Biological Nutrient Removal (TN/TP)**
  - to 8/1 or better in small plants
  - to 5/0.5 or better in larger plants
- Recommended for small to medium systems
- Actual performance model is temperature sensitive
- Coagulant addition for phosphorous removal
  - Ferric chloride generally coagulant of choice
- Alkalinity adjustment if required
  - Carbon source can be site specific, methanol, sucrose, etc.

Environmental Operating Solutions

PROVIDING SAFE, ECONOMICAL AND ENVIRONMENTALLY SUSTAINABLE DENITRIFICATION SOLUTIONS

Significant advantages versus methanol and other electron donors

MicroC Premium Carbon Sources
MicroCg MicroCm

MicroC™ Premium Carbon Sources vs. Other Products

Environmental Sustainability

Pricing/Availability

Frequently Asked Questions

MicroCg™ Downloads

Material Safety Data Sheet PDF

Operator Guidelines PDF

Technical Specifications PDF

MicroC™ Premium Carbon Sources vs. Other Products

Methanol is currently the most widely used electron donor/carbon source for wastewater denitrification. MicroC™ Premium Carbon Sources offer a highly attractive alternative to hazardous, increasingly costly and energy-intensive methanol.

PDF

- Methanol
- Sucrose Solutions
- Ethanol
- Acetic Acid
- Sodium Acetate

PDF

Safety

Methanol is highly **flammable** and **toxic**, jeopardizing the health and safety of treatment plant personnel, facility users and nearby communities. Recent incidents including the explosion of the methanol tank at the Daytona Beach, Florida wastewater treatment plant highlight safety issues associated with methanol. MicroC™ Premium Carbon Sources are safer alternatives to methanol.

Recent Articles highlighting the dangers associated with methanol

Summary of recent accidents involving methanol.	PDF
One Person Dead in Methanol Tanker Crash	Article 1 (7/21/08) PDF Article 2 (7/18/08) PDF
Methanol explosion at Daytona Beach, Florida wastewater treatment plant kills two workers and severely injures a third.	Article 1 (1/14/06) PDF Web site Article 2 (1/12/06) PDF Web site
Suit filed against city of Daytona Beach by worker's family. Two construction contractors, an engineering consultant and two manufacturers of parts to the methanol and bisulfate tanks involved in the blast likely to be named in suit.	Web site
Methanol accident injures eight during high school chemistry experiment	PDF
Worker killed when an empty 55-gallon drum explodes	Web site
Five die as methanol tanker collides with car and bursts into flames.	Article 1 (10/9/06) PDF Article 2 (10/10/06) PDF
CSB releases final report on fatal methanol tank explosion.	Web site

ammonia as one twice as large but operating at 20°C.

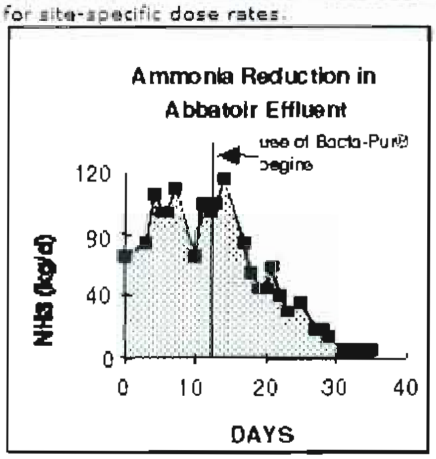
Denitrification traditionally required anoxic conditions. Denitrification increases the pH and regenerates alkalinity. The heterotrophic bacteria also require an electron donor. Products used for this purpose vary from starches to methanol among others. Bacta-Pur® N3000 was especially developed to also include bacteria, which can not only denitrify in an oxygenated environment, but these bacteria can also use carbonate as the carbon source. This means, in waste water treatment, that nitrate can be removed in the same process as nitrification rather than requiring strictly anoxic conditions in a separate part or time of the treatment. Furthermore, it is not necessary to use the same quantities of organic carbon to permit denitrification.

Why the Bacta-Pur® System is Effective

First of all, use of Bacta-Pur® N3000 and XLG assures the presence of a balanced community of nitrifying / denitrifying strains. This mixture will also control soluble organics. Secondly, preactivation the on-site technique of physiological engineering (see brochure spd10 for automatic preactivation) increases the size of the community of the beneficial microorganisms, prior to bringing the cultures in contact with the waste water to be treated.

Ammonia, Nitrite and/or Nitrate Reduction with Bacta-Pur®

Bacta-Pur® N3000 and XLG are two of the most concentrated cultures available. Small regular doses are very effective. Best results will be achieved by introducing Bacta-Pur® N3000 and XLG into the influent of the waste water treatment system. Contact IET-Aquaresearch Ltd., Bacta-Pur Europe bvba or an authorized representative for site-specific dose rates.



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Nitrification / Denitrification

Bacta-Pur
BACTIVATORs

Bacta-Pur® biotechnological products contain beneficial communities of natural bacteria, which have been on earth for millions of years. All we do is grow them in the right proportions to create powerful teams that improve water quality and accelerate the transformation of organic wastes into bacterial biomass, carbon dioxide and water. EVERY PRODUCTION of Bacta-Pur® biotechnologies is analyzed and cleared for shipment only when CERTIFIED PATHOGEN FREE using techniques from the food industry.

Summary

Symptoms

- ammonia, nitrite and/or nitrate concentrations exceed effluent permit level
- slow to recover nitrification/denitrification from toxic shocks
- no or poor nitrification/denitrification in the system

Treatment Benefits

- meet target concentrations in effluent
- recover rapidly from toxic shock
- accelerate start-up and subsequent stabilization of nitrification/denitrification

Requirements for Efficient Nitrification / Denitrification

There are two principle factors which influence the efficiency of the nitrification / denitrification process: the biological community and the water physico-chemistry.

Biological Community — Two bacterial strains involved in nitrification; Nitrosomonas converts ammonia into nitrite, and Nitrobacter converts nitrite into nitrate.

Nitrifying bacteria are very sensitive to environmental conditions; this is particularly true of Nitrobacter. Many factors can inhibit these bacteria including excessive soluble organics and even light. A balanced population of heterotrophic bacteria is essential to control levels of soluble organic pollutants and for denitrification.

Lack of any member of the nitrifying or denitrifying community will stop the processes.

Water Physico-Chemistry — Ammonia and nitrite are only sources of nitrogen for nitrifying bacteria. Other nutrients including carbon, phosphorus and trace elements are also essential. Carbon must be inorganic and is measured as carbonate alkalinity.

Sodium bicarbonate (baking soda) is commonly used to add carbonate alkalinity. Carbonate alkalinity should always be at least eight times the level of ammonia. Water with more than 100 mg carbonate alkalinity/l is normally adequate for low levels of ammonia. Lack of carbonate alkalinity will stop nitrification.

The alkalinity provides pH buffering. The optimal pH for nitrification is near 8.0. Values outside of 6.0 - 8.5 can be

Dealing with sludge

California produces more than 3 million tons of sludge, a byproduct of wastewater treatment, each year.

Disposal method	Estimated weight *in tons*	Percent
Fertilizer (no composting)	1,100,000	34%
Landfill	968,000	30%
Compost	880,000	27%
Burn	66,000	2%
Store onsite	66,000	2%
Other	132,000	4%
Total	**3,212,000**	

Note: Numbers don't add up to 100% due to rounding

SOURCE: Environmental Protection Agency

DANIEL WIEGAND / Union-Tribune