

**Third Meeting of the
OSO CREEK/OSO BAY BACTERIA
TMDL PROJECT
Meeting SUMMARY
8-23-05**

Present at Meeting:

Aaron	Wendt	TX State Soil Water Conservation Board
Adriana	Garza	Corpus Christi Caller Times
Art	Sosa	City of Corpus Christi
Bryan	Gulley	Land Owner
Chad	Ahlgren	TX Commission on Environmental Quality
Cliff	Beaber	Corpus Christi - Wastewater Department
David Z	Conoly	Property Owner
Don	Ocker	Bar D River Ranch / D & C Ocker Farms
Foster	Crowell	Wastewater Department
Gary	Eddins	Barney Davis Power
Gerald	Book	Corpus Chapter of TX Kayak/Fisherman
Greg	Perkes	Perkes Law Firm
Guy	Watts	
Jim	Bowman	Coastal Bend Bays & Estuaries Program, Inc.
Jim	Boyle	City of Corpus Christi
Joe	Kramer	Miller Environmental Services
John	Sendejar	King Estates Homeowner
Johnny	French	Retired - US Fish & Wildlife/Recreational User
Karl W	Schuler	Corpus Christi Windsurfing Assoc (CCWA)
Lionel	Lopez	South TX Colonia Initiatives
Margaret (Maggie)	Moorhouse (Dalthorp)	CBLT
Mark	Marshall	
Patrick	Thomas	Fisherman/Property Owner Pelican Bay
Peggy	Sumner	City of Corpus Christi
Peggy	Glass	Alan Plummer Associates, Inc.
R. Jay	Reining	City of Corpus Christi
Ray	Allen	Coastal Bend Bays & Estuaries Program
Rocky	Freund	Nueces River Authority
Ron	Massey	City of Corpus Christi
Teresa	Carrillo	Coastal Bend Bays Foundation
Vickie	Harraghey	Texas Excursions
Zandra	Zuniga	Office of Senator Juan Hinojosa: District 20

Project Staff Present:

Sandra Alvarado – Texas Commission on Environmental Quality
Earlene Lambeth – Texas Commission on Environmental Quality
Rick Hay – Center for Water Supply Studies, Texas A&M University Corpus Christi
Joanna Mott – Texas A&M University Corpus Christi

Stakeholder Meeting Agenda

SPONSORED BY THE
Texas Commission on Environmental Quality
REGARDING
Oso Creek/Oso Bay Bacteria
Total Maximum Daily Load (TMDL) Project

August 23, 2005
7:00 – 9:00 p.m.

**Carlos Truan Natural Resources Center, Room 1003 on the Texas A&M
University Corpus Christi campus located at 6300 Ocean Drive**

The purpose of the evening's meeting includes an update on the progress of the project, the formation of the steering committee to ensure balanced representation and diversity and a presentation on the watershed model for Oso Creek and Oso Bay TMDL.

- 7:00 Welcome and Introductions
- Review purpose of meeting and agenda - Sandra Alvarado
 - Update on formation of Watershed Advisory Group – Earlene Lambeth
- 7:15 Update on Bacteria Sampling - Joanna Mott
- 7:30 Oso Creek/Oso Bay Watershed Model – Rick Hay
- 8:15 Brainstorming Session – Sandra Alvarado
- Identify potential sources of bacteria based on the available information
 - Identify measures to control bacteria from those sources
- 8:45 Open Discussion
- Other on-going projects
 - Questions
- 9:00 Adjourn

CALL TO ORDER/WELCOME:

Sandra Alvarado, TMDL Project Manager with the Texas Commission on Environmental Quality (TCEQ) opened the third in a series of meetings to be held for an on going total maximum daily load (TMDL) bacteria project for Oso Bay and Oso Creek. A special thank you was given to Ray Allen of the Coastal Bend Bays & Estuaries Program for their continued support to the project and providing refreshments for the attendees. Sandra also thanked Texas A&M University Corpus Christi for the use of their facility to hold the meeting. Sandra recognized Ms. Zandra Zuniga with Senator Juan Hinojosa's office for attending the meeting and providing comment and support for the on-going watershed bacteria project.

Sandra gave a brief overview of the TMDL process, the 303(d) list of impaired waters, TCEQ monitoring program, and implementation plan development for those not present at previous meetings where this had been discussed in more detail.

Formation of Watershed Advisory Group:

Earlene Lambeth reported on the finalization of the Watershed Advisory Group (WAG) for Oso Creek/Oso Bay. The 24-member WAG committee represents a diverse interest throughout the watershed and also complies with HB 2912. The following is the final list of watershed representatives and their proxies that comprise the WAG:

**OSO CREEK/OSO BAY
WATERSHED ADVISORY GROUP (WAG) AND PROXIES**

ACADEMIA – 1

1	Brien Nicolau/John Wood	Texas A&M University Corpus Christi
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AGRICULTURE – 1

2	Andy Garza	Texas State Soil & Water Conservation Board
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INDUSTRY/BUSINESS – 3

3	Joe Kramer	Miller Environmental
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4	Gary Eddins	Barney Davis Power
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5	Jerry Kane/Jeff Saitas	Sam Kane Beef Processing
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LAND OWNER – 6

6	David Conoly	Property Owner
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7	Carl Didier	Property Owner
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8	Lionel Lopez	South Texas Colonia Initiatives
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9	Brent Ocker	Landowner
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10	Bryan Gulley	Landowner
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11	John Sendejar	King Estates Homeowner
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LOCAL GOVERNMENT – 5

12	Ken Faughan	Robstown Area Development Commission
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13	TBD	Nueces County
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14	Ron Massey/Cliff Beaber	City of Corpus Christi
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15	Jay Reining/Peggy Sumner	City of Corpus Christi
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16	Rocky Freund	Nueces River Authority
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NON GOVERNMENTAL ORGANIZATIONS – 4

17	Jim Bowman	Coastal Bend Bays & Estuaries Program, Inc.
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18	Teresa Carrillo/Lois Huff	Coastal Bend Bays Foundation
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19	Leah Pummill	Audubon Outdoor Club
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20	Paul Thornton	Botanical Gardens
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RECREATIONAL USER – 3

21	Johnny French, Patrick Thomas	Retired - US Fish & Wildlife, Fisherman/Property Owner
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22	Tim Matthews	Saltwater Fisheries Enhancement Assoc.
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23	Karl Schuler	Corpus Christi Windsurfing Assoc .
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STATE GOVERNMENT – 1

24	Mike Weeks	Texas Parks & Wildlife
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The WAG is set up to ensure that state government considers local perspectives in its decisions. The Oso Creek/Oso Bay project is a joint effort among the state and local stakeholders. If you are a WAG member, your input and attendance at the meetings is important. If you are unable to attend, please make arrangements for a proxy to attend in your place.

Update on Bacteria Sampling:

Dr. Joanna Mott with Texas A&M University Corpus Christi, the project lead for the bacteria monitoring, gave a brief overview of the sampling stations (11 ambient stations and 11 targeted) and a status report on the project.

Joanna presented a brief review of what bacteria are and how hard they are to destroy through sanitization and disinfection. There are thousands of different species that are microscopic; not all bacteria is bad or cause disease; fecal contamination can be tracked through the intestinal tract of humans (through wastewater), a variety of birds, cattle, wildlife, etc.. More information about recreational water illness (RWI) can be found at the Center for Disease Control (CDC) web site: <http://www.cdc.gov/healthyswimming>

Monitoring stations for the Oso Creek/Oso Bay project were developed for *Enterococci* (an indicator for marine and fresh waters for fecal contamination present and use standard EPA method 1600 for analysis) after a brief sanitary survey and input from the stakeholders. Weekly monitoring started on May 19, 2005 and unfortunately, only one rainfall event has occurred since the monitoring began.

Question: Is the water flowing when you take these samples or are you taking these samples from stationary ponds?

Answer: All are flowing except for sampling station 18501.

This first year (2005) of sampling will be completed next week, however a lot of discussion has been taking place with the TCEQ about what additional monitoring is needed to complete the modeling being done by Rick Hay. It has been decided that the sampling will continue through April 2006. Sampling will be done weekly in January and February, with an additional four week sampling to be conducted during bird migration. Other months will be sampled monthly. There are also plans are to sample all 22 stations during three rainfall events.

Question: How extensive does the rainfall event have to be and in what area?

Answer: That is based on best professional judgment – we are looking for at least over an inch of rain.

Question: Without picking out just one, can you give us some examples of the kind of source that might be causing the reaction you have found? Animal feed lots, a break in a sewer main, what might we be looking for?

Answer: Leaking pipes, septic tanks or systems not operating correctly, irrigation water, illegal dumping. It is dry weather so we don't have run-off. Rick is going to talk more about migration of birds. There is a hypothesis that this might be a bird load, we don't know yet.

Question: Are you planning any DNA source tracking?

Answer: At this point in this project, we have not been funded to do that. Through the monitoring we are hoping to find some “hot spots” and then maybe we can do some DNA testing. It is not out of the question, it is just not planned at this time.

Question: Is the bacteria increasing in the creek or degrading?

Answer: That is an interesting question and it depends on the conditions in the water. Rick is going to talk about die-off more in his presentation.

Question: Has anyone ever posted any signs that say it is dangerous to get in the water?

Answer: Of the 384 listings (impaired water bodies) we have statewide, that would require a lot of manpower and funding to post signs on each water body.

Question: Whose responsibility is it? It is a big deal to me because I see kids swimming out there. No one seems to be doing anything about letting people know (i.e. colonias). They don't know there are e-coli there.

Answer: In some areas there are signs but we would be looking at the counties, cities, etc. The City of Corpus believes this is not a new phenomenon; this has existed as long as bacteria and man have been on earth.

Question: But you could post signs that says do not enter the water for so many days after a heavy rain?

Answer: But you would have to do that on every natural water body in the state. That is why you have personal hygiene, when you swim and have recreation in an outdoor water body that is not treated you have to shower, etc.

Answer: This is one of those action items we could do now through a public service announcement maybe. Also, the General Land Office has a web site located at <http://www.glo.state.tx.us/coastal/beachwatch> that can be checked for every station that is being sampled and it says whether it is low, medium, or high.

Question: Is there a record of anyone that has gotten ill from the water?

Answer: Years ago, the Estuary Program funded a study and found it was very difficult to access medical records. I believe the study said that 1/2 person annually would die from recreational accidents but that did not tell us the cause of death (i.e. it could have been from a boating accident, drowning, etc.).

An electronic copy of the sampling graphs and presentation can be seen at the following web site:

<http://www.tceq.state.tx.us/assets/public/implementation/water/tmdl/67-aug05-mtg-mott.pdf>

WATERSHED MODEL:

Rick Hay from the Center for Water Supply Studies at Texas A&M University Corpus Christi gave the next presentation on the Oso watershed model. He said that in the past they were using a monthly model and had now changed to a daily model. That has improved the resolution of the bacteria concentration forecast considerably. Rick explained that the model is based on run-off and reviewed how it worked.

A copy of Rick's presentation and graphs can be viewed at the following web site:

<http://www.tceq.state.tx.us/assets/public/implementation/water/tmdl/67-aug05-mtg-hay.pdf>

He reported that when they ran the model, the water did move through as anticipated, as well as the decay rates, but also noticed that they were under predicting bacteria (*Enterococci*) in run-off events. They worked on a new event mean concentration (EMC) grid using data from the one rainfall event but they are still looking at ways to improve the EMC value from agricultural lands. Even with the new higher EMC grid the model is still under estimating rainfall in the historic data. He expressed concern that even if they use the highest EMC grid that is available for land use, the calculated run-off loads would still be smaller (under predicting) than the measured run-off loads. Rick reported that all the data had been quality assured and it was all good data. Rick concluded that there were other loads that had not been accounted for in the model.

After much review and research, Rick is now looking into avian loadings, particularly gulls in the watershed. There is a lot of information to review, studies that have been done and calculations to put into the model. Rick believes this will help in the missing load for the watershed model. The birds they are counting are in the tidal zone and will distribute the load throughout the three zones of the watershed.

One stakeholder reported that we are talking about short-legged birds that will roost in the grasses and on dry ground (above the tide). Depending on the tide and the wind, there could be days when the feces sit there on dry ground. Then when the south wind blows the water inundates that side of the bay and a large bacteria load is getting into the bay. The wind could vary the tide by two feet. Other stakeholders reported vast amounts of birds in various places in and around the watershed and bay.

Rick went through his model presentation station by station pointing out areas that cause concern and getting stakeholder input on the possible high levels of bacteria. At one site, the City of Corpus reported a flushing of a large pipeline that could have possibly caused a particular spike in the bacteria load on a particular day. Rick said he would also look into septic tanks that are not performing well and horses in the area that could also be adding to the loadings in the creek and bay. There is a strong belief that the high bacteria values are due to fecal contamination. A suggestion was made to do a sanitary survey along the creek to help identify any potential sources that are contributing to the loadings.

Due to the time restraints, the brainstorming session will be on the agenda for the next meeting which will be held in January. The meeting was adjourned with a thank you for the stakeholders' input into the project.

An Oso Bay – Oso Creek web site is maintained by the TCEQ at the following web address:

<http://www.tceq.state.tx.us/implementation/water/tmdl/67-osobaybacteria.html#reports>

The next WAG meeting has now been scheduled for January 17, 2005 at the Natural Resources Center Room 2001 on the TAMUCC campus from 7:00 – 9:00 p.m.