

**Meeting Summary
Leon River TMDL Stakeholder Group
Hamilton, Texas**

January 12, 2006

STAKEHOLDERS PRESENT: Jay Bragg (Brazos River Authority), Richard Cortese (Bell County Commissioner, Pct. 1), John Cowan (Texas Association of Dairymen), Hall DeBusk (Hamilton-Coryell Soil & Water Cons. District), David DeJong (Texas Association of Dairymen), Richard Eyster (Texas Department of Agriculture), James Moore (Bell County Farm Bureau), Norman Mullin (Enviro-Ag Engineering), Aaron Wendt (Texas State Soil & Water Conservation Board), and Bob Whitney (TAES)

STAKEHOLDERS ABSENT: Anthony Daniel (City of Temple), Tom Gerik (TAES), Royce Lubke (Rancher), John McCormick (City of Comanche), Genell Stuteville (City of Gustine), Texas Parks and Wildlife Department, Fred Weaver (City of Gatesville), and James Williams (City of Dublin)

SUPPORT TEAM PRESENT: Kerry Niemann (TCEQ), James Miertschin (James Miertschin & Associates), Larry Cox (Hicks & Company); Mel Vargas (Parsons)

OTHERS PRESENT: Frank Volleman (dairy); Michael Martin (TCEQ); Leon Nichols; Gaylon Jones Jr.; Joe Borges (Lingleville Feedyard); Frank Bursleson (TCEQ); Alfred Leal (NRCS); Rusty Harris (Hico); Juan Escobar (Comtex Dairies); Les Etherton (Riverside Ranch); Lillian Wilhelm; Ronni Harris (City of Hamilton); A.C.Tamminga (TAD); Hank Postmus (Dublin Ditch Dairy); Marcel Volleman (Sundance Dairy); Bob Haschvie (KYOX/KSTU Radio); Neil Holt (USDA); Pat Gunta; Larry Adams; Carol Swinney; Juanita Anders; Martin Seider; Chris Miller (TCEQ); Robert Chaison; Allan Jones (Texas A&M); John Foster (TSSWCB); Keith McIlvain (Texas Farm Bureau); Bill Flannery (City of Comanche); Mike Tyson; Tommy Elliott (Comanche Farm Bureau); Steve Clark; Jim Farley; Leonard Kirkland; Cullen Stephens; Gerald Burs; Jeff Stewart (CNB Comanche); Jim Stallings; W. McMinn; Dickie Clary (Hamilton Co. Commissioner); Larry Kopp; Sue Kopp; Gerry Kendall (TCEQ); Bill Ross (TCEQ); Carolyn Smith; James & Sue Lesta; Tamilie Finneth (TCE); Rick Cato (Bell County Commissioner); John Ellis (BRA); Trey Blocker (TSCRA); James Grimm (Texas Poultry); Melvin Gaylor

WELCOME AND INTRODUCTIONS:

The meeting was held at the First State Bank meeting room, from approximately 12 p.m. to 3 p.m. on Thursday, January 12, 2006. Kerry Niemann introduced himself and the support team and gave a summary of the previous meeting and the project status. He informed stakeholders the reason for the meeting was to discuss results of additional modeling since previous meeting, as well as to introduce preliminary findings affecting TMDL implementation recommendations. He then introduced Dr. James Miertschin, the presentation leader.

PRESENTATION SUMMARY:

Dr. Miertschin presented a Power Point presentation of a review of model development issues to date. Dr. Miertschin's Power Point presentation is available for review on the TCEQ website at <http://www.tceq.state.tx.us/assets/public/implementation/water/tmdl/34-leon-01-12-06present.pdf>.

Highlights from the presentation are presented below. The presentation was intended to be interactive; thus, audience members were encouraged to ask questions and provide comments throughout the meeting. Questions (Q), Answers (A), and Comments (C) are noted below.

- Model is HSPF (Hydrologic Simulation Program Fortran) – watershed modeling system. It simulates hydrology, point source and non-point source loadings, and simulates water quality in the receiving water. This model can simulate watershed conditions for everyday of the year. The first parameter modeled is the hydrology, or flow, that is based on precipitation in the watershed. If it doesn't rain then the model doesn't predict runoff flow. Precipitation input is an integral part of the process. Also simulates receiving water concentrations of constituents, which in this case are bacteria. Sub-watersheds are simulated in the model with their own stream channels within each watershed. Sub-watersheds are based on topography, land use categories etc...

The next step is to simulate bacteria concentrations. Non-point source is diffuse in nature and is represented in the model by wash-off from the land surface and by direct sources which include leaking septic systems, wildlife or livestock animals depositing directly on the stream, or leaking sewer lines in municipal areas. Estimates on bacteria loading of the land surface were based on land use, ranching, forests, livestock, and waste application fields from dairies, cropland, residential and commercial uses. When runoff occurs, bacteria are simulated to be washed off the land surface into the receiving stream and decay rates are applied. Calibrated model inputs are placed into the model for different reaches based on land uses. Base model loading relies on land use types and number of animals in each reach.

- Segment 1221 of Leon River is the study area
 - Impaired for pathogens
 - Impaired reach is from 12 miles above FM 1702 down to approximately 12 miles below US Hwy 281, a distance of roughly 50 miles
- Show simulated versus recorded runoff data
 - HSPF Bacteria Simulation
 - Fecal sources considered in modeling analysis
 - direct sources
 - rangeland/forestland
 - waste application (WA) fields
 - cropland
 - urban
 - point sources

The model takes into account fecal coliform accumulation rates for both direct and indirect sources. We plot simulated results vs. observed historical data and then adjust inputs into the

model to achieve a more realistic simulation. Keep in mind that observed historical bacteria database numbers are grab samples, and model results are simulated as daily mean concentrations.

Q: For dairies, where did you get the cattle numbers used?

A: Mainly from TCEQ permits and TSSWCB registrations.

Q: Did you use the total- permitted animal numbers for dairies, rather than actual numbers?

A: Yes. We realize that may over-count the numbers.

C: It definitely would.

Q: Did you look at the dynamics of the fecal numbers: life history, season.

A: Yes. The calibration exercises take those numbers into account.

Q: Does it take into account the distance from water.

A: The distance to the water is not an explicit term in the model, but, it should be taken into account, along with seasonality, as the parameter values are adjusted in calibration.

Q: I noted that some of the outliers (high bacteria) go along with low flow periods. Could that be from normal wildlife, such as bats?

A: It could be; multiple years of sampling and additional source tracking work would be more illustrative.

- The water quality standard for fecal coliform is 200 organisms/100 ml geometric mean; 400 organisms/100 ml grab sample, and for *e coli*. is 126 organisms/100 ml geometric mean; 394 organisms/100 ml grab sample.

Q: Where did that number come from?

A: Uses and numerical criteria for Texas waters are established in the Texas Surface Water Quality Standards (Title 30, Chapter 307 of the Texas Administrative Code). This provision was put in place many years ago, and the issue has been driven in part by lawsuits and federal mandates.

- JM explained concept of indicator organisms.
- Basis is risk for encountering pathogenic bacteria in water.

Q: We've argued in the past about assumptions over what caused the problem. Could your (JMA) assumptions be wrong?

A: Yes.

C: This is not making sense. You're going backwards. I don't agree with your assumptions. Your numbers aren't defensible.

Q: If you have an end model you're trying to "tweak" into, your assumptions and allocations should be fair and equitable. Is the model pulling out certain groups based on data files, regardless of on-the-ground facts?

A: I used the information and data that was available for model calibration, which covered the period 2001-2004. I looked for visual agreement of simulated results versus observed/sampled values.

C: You've built a model with a geometric mean based solely on rainfalls, without regard to specific assignment to different types of users/animals.

Q: Do you have information on the relationship of manure application to fecal coliform in streams, other than the calibration exercise?

A: I have reviewed the body of literature; used in modeling assumptions (ACQOP).

Q: Do you have data specific to the Leon River that supports the assumed numbers?

A: No. To my knowledge, no site specific data is available.

Q: Are you saying the contribution is linear?

A: No. The effort has been to make defensible allocation assumptions. For instance, the percentage of residential land use in the study area is tiny compared to agricultural land. So, even though the literature generally shows a large per-acre contribution from residential land uses, their relative importance in the study area is small.

C: Land application often involves waste that has been partially treated. Your assumptions are flawed.

A: It is understood that composting or other treatment should reduce bacteria counts. However, there is a wide range of concentrations noted in literature.

Q: Are you telling me a driveway is the same as a Waste Application field?

A: From a per-acre perspective, based on the current literature, yes. The literature indicates that urban sources have high bacteria counts, as do waste application fields.

Goals of TMDL:

- Recommends waste load reductions for 4 municipal waste water treatment plants – Dublin, Comanche, Gustine, Hamilton
- Various BMP scenarios were evaluated (covered in Power Point).

With the simulated daily data generated we compare the geometric mean every 90 days in the watershed. Our target is 200 colonies/100ml and we model for 190 colonies/100ml, which includes a 5% margin of safety. Since we are currently exceeding this bacterial concentration then this indicates that we have to have controls on the watershed to get the numbers down below the target level. Using the model, loading reductions were made in the land use categories in order to bring the geometric mean below the target, based on varying assumptions, in order to develop an array of potential load allocations. This includes point source, non-point source and WAF's. The goal is to get the mean below 190. Several allocation scenarios were reviewed (see Power Point slides).

Q: Would a 30% drop in fecal coliform contribution by dairies (from composting) meet the TMDL goals?

A: Yes. That would be the prediction from one of the potential scenarios.

C: That's been done. Let's go home. Your assumptions don't take into account current conditions.

A: The allocation scenarios that were modeled may not be the final allocations developed in the implementation phase.

Implementation

- Finalize TMDL document
- Begin implementation phase
 - stakeholder input
 - determine target drop for each source
 - additional model runs as needed
 - continued sampling as needed

TMDL sets the number for the watershed; doesn't set the mode of implementation.

ADDITIONAL QUESTIONS/COMMENTS:

Q: This segment of the Leon River is on the 303(d) list. What are the ramifications of not delisting? Is there any timeframe?

A: EPA guidance suggests 10-13 yrs from when the segment is listed to when the TMDL is approved. The TCEQ's policy is 10yrs. This is one of the first bacteria TMDL projects in Texas.

Q: Are we setting ourselves up for failure? Example – wildlife contributions equal approximately 50%, according to the BST data. What do you do about that? Since you can't do anything about that 50%, all measures will be focused on the remainder of the contributors (i.e. local producers). Are there any case studies around the country in similar (non-point source) areas that have been successful?

A: A.Wendt of TSSWCB acknowledged that he had some case studies. Yes. We can collect those case studies.

C: We need to see those studies.

Q: I'm curious about bacteria source tracking data. Have you calculated total bacteria load from waste application (WA) fields as a percentage of total loads? Would offer opportunity for increase in confidence of the baseline scenario. Very concerned if calibration data showed WA greater than 20%.

A: Keep in mind that most of the BST data sampling events are snapshots conducted under relatively elevated flow conditions, with most of the flow elevated due to preceding storm runoff conditions. Modeling results are weighted toward runoff conditions. So, the proportion of contribution identified from BST studies may not be the same as the model simulated proportions.

Q: Is anything being done to clean up the lake (Lake Proctor)? Are we being asked to clean up somebody else's mess?

A: That's above our study segment...don't know. Good question. I did observe that bacteria concentrations in releases from Lake Proctor were somewhat higher than I would have anticipated. We'll look into that question.

Q: Will TCEQ do any site-specific studies to validate the models? We feel like we're guinea pigs.

A: Additional studies or data collection could happen during implementation. HSPF is a well respected model, used throughout the country and accepted by EPA.

Q: I'm concerned with site specific conditions. We're doing an injustice if we don't take a holistic, watershed approach. Need to take a structural approach. Need something to support this.

A: Having a proactive stakeholder is very important. There are a number of parties involved with various solutions. Local action is very necessary for a positive outcome. There will be continuing re-assessment, with trial and error.

A: We'll work with you to get a plan underway, so we don't "drop a bomb" down the road.

C: We're doing sampling on other watersheds.

A: We can re-run the model based on additional data.

C: If there's not a systemic solution, then the efforts tend to focus on one or two user categories. Let's validate the model.

C: Suggest next time you do a study, incorporate local folks in the bid process, so you have local thoughts and sensibilities. Local parameters are not taken into consideration in the literature. I don't feel local issues have been incorporated in the model. Have to be able to adjust in the future based on new information. TCEQ needs to be flexible to solve the problem.

C: We've had to deal with ignorance from government over the years. No common sense. Again, we feel like guinea pigs.

A: We're here to work with you. We'll do everything we can to address issues and foster confidence in the model and respective TMDL. There's a lot of stakeholder collaboration, members interacting and addressing issues on a first name basis.

Q: How do we get together in the future to discuss a solution? How do we look at BMP's that work so we can evaluate them?

A: Many of the stakeholders here today represent agencies that are providing creative funding opportunities statewide and addressing issues that are similar. Collaborating together to discuss these funding opportunities and BMPs that work is fundamental to the success of the project.

Q: Based on current TMDL timeline, what is our timeline? How do we move that forward?

A: Timeline – this is 3rd year. We're expected to have a TMDL report by August 31, 2006. JMA has drafted the model report for TCEQ review. We will post the draft report on the project web-site and notify stakeholders when it's available for review and comment.

Q: How much more data is needed? If fecal coliform is 50% wildlife, what else do we need to do?

Q: What is process to seek extension of deadline?

A: At this point in time, from a Project Manager standpoint, given that we've had two meetings to address modeling concerns and will have another, we are still on schedule. Therefore, we see no need to extend the deadline.

Q: What's the mandate for the TMDL? Assign criteria for different input categories?

A: It's up to stakeholders in implementation to decide how to get down to the TMDL level.

A: The timeline for the implementation plan is up to the stakeholders, to some degree. Other areas (example: San Antonio) have proactively come up with a watershed plan to encourage practices consistent with TMDL goals and objectives.

C: Brazos River Authority (BRA) may be appropriate to take lead on the watershed plan [several asked Mr. Bragg to go back and check with leadership at BRA].

Q: Can we look at site-specific data on flow from different land use types, from this region?

A: Yes, if data are available.

Q: Can the TMDL be changed later, based on more data?

A: EPA does not embrace a tiered approach. But, that is continually being challenged around the US, based on the acquisition of better data. So, one could expect that it can be modified based upon additional data.

C: I disagree with your numbers [on the record]. Listen to us. Dairy rules have evolved, and in fact most BMP's you might come up with are currently required, as of 2004. TMDL will cost every producer in this room money.

A: Don't leave thinking this is going to break the bank. There are cost-share programs, EQIP, soil board, etc. We need to work together and come up with a strategy. We need stakeholder collaboration to resolve some of these issues. As stakeholders have suggested, perhaps a watershed management approach that requires everyone working together. The stakeholders represent agencies and entities that can coordinate with each other to come up with the solution. We are here to work with you to resolve the problem and arrive at a consensus on implementation.

ACTION ITEMS:

1. JMA to revisit Proctor Lake and other sources and assess percent of input;
2. Texas Association of Dairymen will send a list of comments;
3. Stakeholders: Please make it a point to get together and discuss positive ways to move forward with implementing the TMDL. TCEQ can't give you contact info for other stakeholders, but please interact freely and continue communicating outside of this meeting.

Finalizing TMDL document may take a year after the TMDL report is finalized:

1. Public Meeting (and response to all comments);
2. Brief the TCEQ commissioners;
3. Review by TCEQ and EPA.

Minutes of this meeting will be posted on the project web page.

Dr. Miertschin's Power Point Presentation will be loaded on the TCEQ website today.