

## **GROUNDWATER RESEARCH SUBCOMMITTEE MEETING RECORD**

### **TIME AND DATE:**

9:00 AM, Wednesday, April 20, 2011

### **LOCATION:**

Texas Commission on Environmental Quality Campus Building F, Room 2210, 12100 Park 35 Circle, Austin, TX 78753

### **PURPOSE OF MEETING:**

Third quarter regular business meeting

### **AGENCIES/ENTITIES REPRESENTED:**

Bureau of Economic Geology [BEG]

Texas AgriLife Research

Texas Commission on Environmental Quality [TCEQ]

Texas Department of Agriculture [TDA]

Texas Groundwater Protection Committee [TGPC]

Texas State Soil and Water Conservation Board [TSSWCB]

Texas Water Development board [TWDB]

Texas Water Resources Institute [TWRI], a branch of Texas AgriLife Research

### **ATTENDEES:**

Bridget Scanlon	BEG, Co-chair of the GW Research Subcommittee of the TGPC
Kevin Wagner	TWRI (Texas AgriLife Research)
Cary Betz	TCEQ, Chairman of TGPC
Lauren Bilbe	TCEQ
Radu Boghici	TWDB
Mike Chadwick	TCEQ
Alan Cherepon	TCEQ
Richard Eyster	TDA
Donna Long	TSSWCB
Joseph L. Peters	TCEQ
Brad Spencer	
L. Scott Underwood	TCEQ
Michael H. Young	BEG

### **MEETING SUMMARY:**

## **Call to Order and Introductions**

Dr. Bridget Scanlon and Mr. Kevin Wagner called the meeting to order at about 9:02 AM. Dr. Bridget Scanlon, BEG, is one of the Co-chairs of this subcommittee. Mr. Kevin Wagner, TWRI, was acting as a Co-chair at this meeting, sitting in for Dr. B. L. Harris who could not be present. The first order of business was to have everyone introduce themselves.

## **Discussion of Sources of Funding and Current Calls for Proposals**

The meeting started with Mr. Boghici passing out a TWDB handout listing all their requests for proposals, applications, and qualifications. It was a printout of the funding page on TWDB's website. Mr. Boghici went over the listing, giving a brief explanation of each project, and noting which ones were already past the deadline for making application.

Dr. Scanlon moved the discussion to the final priority list of five research topics chosen at the last meeting, for which the Groundwater Research Subcommittee will pursue the drafting of white papers. The first item on the list was **The characterization of groundwater - surface water interactions in the state with respect to water quantity and quality**. Dr. Scanlon asked Mr. Betz whether there was someone at TCEQ with which we should interact on this topic in putting together a white paper. Mr. Betz responded positively, but he would have to do a little research to come up with specific names. Collaborators could come from the Surface Water Group or the TMDL group. She then asked Mr. Wagner if he knew who at A&M could be a collaborator. He responded that there were a number of people that could be interested, such as Dr. Jason West and Dr. Georgianne Moore. She also asked Mr. Boghici the same question. He responded in the affirmative and added that indeed the TWDB had a interdisciplinary group that was specifically interested in groundwater-surface water interactions. Mr. Boghici then named a number of people at the TWDB that would be possible collaborators. He added that he would get a more complete list to Dr. Scanlon in the near future. Dr. Scanlon suggested that once a group of collaborators is put together, they could work on the white paper through email. She then added that it would be a good idea to also include people from some of the river authorities. Mr. Wagner indicated that he had some river authority contacts that he could follow up. Ms. Long suggested that Ms. Debbie Magin of the Guadalupe-Blanco River Authority (GBRA) would be interested as well as Ms. Lauren Bilbe of TCEQ, since she is the Nonpoint Source Subcommittee Co-chair and the project manager of two projects that deal with groundwater-surface water interactions. Dr. Scanlon asked if requests for nonpoint source projects proposals for 319 funding would soon be coming out. Ms. Long responded that there had been some delay because of uncertainty in funding. At this point funding is at 80% of last year's. This reduction in funding necessitated the reprioritization of funding goals. Funding is based on projects involving the water bodies on the 303d list. Dr. Scanlon asked Ms. Long if groundwater-surface water interactions were common contributors to the contamination problems of water bodies

on the 303d list. She answered that she didn't know, but that many of the stakeholders were interested in adding groundwater components to watershed protection plans, but there was some resistance to this from the nonpoint source personnel at EPA. However, she continued, the white paper that we develop would help sell EPA on the idea of the importance of groundwater-surface water interactions involving nonpoint source contamination. Dr. Scanlon asked about the progress on the latest 303d list. The answer was that the newest list is still in draft form, and the 2008 list was still the official list that was being used. Dr. Scanlon summed up that she would coordinate with all the entities mentioned to get a group of people together to start working on the groundwater-surface water white paper. After getting a group together the first step would be to write an outline.

Dr. Scanlon moved the discussion to the second proposed white paper, on the subject of **Aquifer Storage and Recovery (ASR) Programs in Texas**. She asked Mr. Betz about the ASR project in the Edwards Aquifer. He stated that in order to protect the endangered species in the Comal and San Marcos Springs, the Edwards Aquifer Recovery Implementation Program (EARIP) was developed to use the existing San Antonio Water Supply (SAWS ) ASR project to manage groundwater pumping. Added to this would be the use of a voluntary irrigation suspension program in the agricultural areas of the Edwards, whereby agricultural producers would be paid to not pump water at some set price per acre-foot. The goal for this program is to conserve 30,000 acre-feet a year. Furthermore, a variety of mitigation and minimization methods will be implemented to improve the health of the species' habitats and the health of the species themselves. They will address certain things like gill parasites and invasive and predatory species that have moved into the habitats, the control of which it is hoped will help the survivability of the endangered species during a drought. There are some other minor elements included in the program, but the two main components are the voluntary irrigation suspension program and the use of the SAWS ASR project.

Mr. Betz was asked to go on and describe the SAWS ASR project itself. The Edwards Aquifer is unusual in that there are water rights associated with the use of its water, unlike any other aquifer in Texas. The Edwards Aquifer Authority (EAA) issues permits for the use of Edwards Aquifer water, which no other groundwater conservation district in the state does. When Edwards Aquifer water is plentiful (when spring flows are high) SAWS increases its pumping volume beyond its immediate needs – but within its permitted volume – for the purpose of injecting the excess pumpage of water into the Carrizo Aquifer for storage. Then, during dry periods, it pumps reduced (drought restricted) amounts of water, amounts short of its immediate needs, from the Edwards, but makes up the difference by pumping the stored water from the Carrizo. At this time SAWS has approximately 60,000 acre-feet stored in the Carrizo and they believe they can store twice as much. The water is not treated before it is injected into the Carrizo, but when it is removed it only needs chlorination. The permit for the ASR project is issued through the TCEQ's Underground Injection Control (UIC) program. ASR wells are classified as Class V injection wells. The TCEQ contact for Class V wells is Mr. Bryan Smith. Mr. Betz informed us that there are only two real ASR projects in Texas, the SAWS project and a project in Kerrville. Kerrville uses surface water from the

Guadalupe River, to which they have a water right, to inject into the Edwards-Trinity Aquifer for later use during times of drought when Guadalupe River flow is reduced.

The third white paper proposal discussed is to be entitled **Quantification of the vulnerability of dynamic aquifer systems such as karst and alluvial aquifers to contamination, focusing particularly on pathogens**. Mr. Wagner started the discussion on this one. He stated that it was mostly in response to some of the needs of the Nonpoint Source Management Program. There is a need there to update or redo the existing aquifer vulnerability index that's used in the Nonpoint Source Program. TCEQ's and TSSWCB's Nonpoint Source teams need to be involved with this one since ultimately their needs need to be met for the Nonpoint source Management Program. Ms. Long and Ms. Bilbe, the Co-chairs of the Nonpoint Source Subcommittee, made a few comments concerning aquifer vulnerability. They are looking into various options of doing vulnerability assessment. They are considering not using DRASTIC, but perhaps going with some other method of groundwater vulnerability assessment. Ms. Long stated that Ms. Susan Roberts of the River Systems Institute (RSI) is doing some investigation, for the Nonpoint Source Subcommittee, on what methods may be available and feasible for vulnerability analysis. Dr. Scanlon added that she thought that many of the components of DRASTIC were appropriate, such as depth to water and recharge, etc., but she was not so sure of the correctness of the method used to combine all the various components to come up with a vulnerability. Ms. Long added that the DRASTIC procedure seems to score too low on groundwater vulnerability which causes groundwater nonpoint source projects to always be ranked below other projects. Dr. Long stated that DRASTIC only accounts for contamination from the surface and does not take into account subsurface sources of contamination such as from geologic formations. Mr. Betz reminded everyone that EPA is only concerned with anthropogenic contamination, contamination that can be regulated, and the same is true with TCEQ. Ms. Long explained how the allocation of funds through the Clean Water Act is supposed to be for nonpoint source and that its becoming more and more geared towards the 303d list and how to remediate 303d listed waters, but in Texas we are trying to use a more holistic approach with the use of Watershed Plans. And we have found that the stake holders in Texas, at almost every meeting, especially of rural stakeholders, are asking about how to protect their groundwater. Can groundwater protection be included in the watershed protection plans? So there is a need for including groundwater protection in the watershed protection plans, which are supposed to be stakeholder driven. There needs to be a way of incorporating groundwater protection into these plans. Dr. Scanlon asked Mr. Wagner about education efforts on protecting groundwater. He responded that Dr. Diane Boellstorff, Assistant Professor & Extension Specialist, Texas AgriLife Extension Service, Texas A&M University, has a project to put together a Texas Well Owner Network, which will be carrying out a number of education programs. Dr. Scanlon asked if these educational programs could possibly be expanded to include information on sources of contamination of groundwater. Mr. Wagner responded that subject matter along these lines may already be in the educational agenda for this program. Mr. Wagner stated that he would send additional information on this program to either Dr. Scanlon or to the whole Groundwater Research Subcommittee. He also, reminded us that Dr.

Boellstorff had given a presentation on the Texas Well Owner Network, a few meetings back, before the program was funded. The program will include the possibility of well owners bringing in water samples for simple testing, mainly to determine if more elaborate testing may be required. This type of activity brings people in, thus providing an opportunity for further educating them. Ms. Long also brought up the benefit of having a knowledgeable groundwater professional available in area, to whom people can go for well testing or with questions, especially people in rural areas. Dr. Scanlon connected this idea with Dr. Bill Harris's proposal of having expertise available locally, in areas with contaminated groundwater, to help people keep their individual water treatment equipment operational. She asked whether something along those lines could be incorporated into the watershed protection plans. Ms. Long responded that it was her understanding that Dr. Harris had more envisioned having a groundwater and water treatment expert at the groundwater district level to serve as a resource for people to come to with questions, etc. Dr. Scanlon asked if there may be enough interest from the watershed programs, judging from what stakeholders have expressed, to put together a proposal to try to meet their issues; as well as to include what Dr. Harris wanted to promote with point-of-use treatment for rural areas with compromised groundwater in areas too sparsely populated to make feasible the formation of a community water supply system. Would there be enough interest to also including a groundwater education component? Mr. Wagner responded that they, at the TWRI, had looked into what type of funding might be available for the type of program that Dr. Harris had envisioned, a program that would provide point-of-use treatment for private wells, and they concluded that it would probably have to come from a private foundation. There are no federal or state programs that would provide funding for private home owners. Dr. Scanlon suggested that perhaps the funding could be for an education program that would inform the well owners of the various treatment options available. Ms. Long added, if we're thinking of using 319 grant funds, that the argument from EPA Region 6 would be that since they funded updating the TEX\*A\*Syst Program, which includes wellhead protection, and they're funding the Well Owner Network, that this would be sufficient support at this time, especially with the present crunch in funding. They probably will not be open to funding any additional activities along these lines. Even though this program is a good idea, it probably should be reserved for a future date. Dr. Scanlon then asked why the point-of-use treatment idea had not been incorporated in the Well Owner Network program. Mr. Wagner responded that point-of-use treatment is not a nonpoint source issue, so if the goal is to obtain nonpoint source funding the proposal needs to address nonpoint source problems. Point-of-use treatment would be a Safe Drinking Water Act issue and there should be funding there for that type of program, but there isn't unless it's for a community system. Dr. Harris's proposal is that if you have a population of people with private wells accessing the same aquifer in the same area, why can't the aquifer in this area be considered a community system and be eligible for funds. The funds would support the employ of an expert that would provide maintenance to all the point-of-use systems in the community.

Dr. Scanlon pointed out that our discussion had merged into subject matter having to do with the fourth white paper proposal, **Evaluation of groundwater treatment methodologies for effectiveness and economics in relationship to removal**

**of contaminants.** Mr. Wagner went on to ask if anyone was familiar with any foundations that might be able to fund this type of point-of-use groundwater treatment program. No one could think of any at the moment, but Mr. Cherepon interjected that he thought that he had heard of a groundwater foundation and that he would look into it. [After the meeting Mr. Cherepon researched the question and found the following two foundations. The Groundwater Foundation: <http://www.groundwater.org/index.html> and The Texas Water Foundation: <http://www.texaswater.org/index.html>.] Mr. Wagner concurred that at some time in the future it would be a good thing to have a groundwater education program, fact sheets, point-of-use treatment information, and other information available to incorporate into the Texas Well Owner Network Program. These things would be quite helpful to the audience to which they will be providing groundwater protection information.

Dr. Scanlon turned the discussion to the fifth and final white paper topic, **Health aspects of lignite deposits associated with groundwater**. She commented that there might not be enough information at this point to put together a white paper on this subject. Mr. Wagner, however, suggested that it may be a good idea to put a group of people together to meet on the subject. One potential member would be Dr. Vincent Nathan, of the Texas A&M School of Rural Public Health. He has a strong interest in water quality issues and their impacts on health. Dr. Scanlon asked Mr. Wagner if he would get in touch with Dr. Nathan about being a member of a group, and she also said she would send Mr. Wagner some information on the health aspects of lignite deposits on groundwater. Mr. Betz added that he has the public drinking water data for the Organics Carrizo study; however, it is raw data and there will be a need to work with the Public Drinking Water people to understand the meaning of the data and how to use it.

Dr. Scanlon went on to discuss who would be working on which of the white papers. She volunteered to work on papers one, two, and four, and that Mr. Wagner would work on three and five.

Dr. Scanlon stated that we had put the fracking issue on the back burner. She asked Mr. Boghici if there was much discussion on water availability for fracking at the TWDB. He responded that there was no discussion of which he was aware. On the other hand, Mr. Betz informed us, there was quite a bit of discussion by the Legislature. As a result the TCEQ has sent a group of people to Cotulla, last week, to hold a public meeting on the subject, and the group will be going to Jordington next week, and sometime in May they will be going to Cuero. The Eagle Ford area is being targeted with these visits. The group provides information on the programs at TCEQ that may in some way involve fracking activities. The subjects included wastewater, water rights permits for surface water, the support of groundwater conservation districts, and spill response. The group sent to Cotulla included about six people from the Austin Office, including the head of TCEQ's Small Business Environmental Assistance Program, Mr. Betz, and also one of TCEQ's Field Operations Regional Administrators. Also present were several people from TCEQ's Regional Offices including the San Antonio, Laredo, and Harlingen Offices. A Railroad Commission representative was also at the meeting. Attending the meeting were several county commissioners, city officials, and community activists. It

was clear from the Cotulla meeting that there were three great concerns about fracking operations. In descending order of importance they are: the volume of groundwater used, the safety of the fracking operations, and the potential of groundwater contamination. Fracking is a hot topic with the Legislature at this time.

Mr. Betz went on to mention that surprisingly, at the Cuero meeting, the one thing that was not mentioned in the presentations was uranium mining. But the first question that came up after the presentations concerned uranium mining. The oversight of not including uranium mining in the presentations will be corrected in future meetings. Also, the TCEQ Fact Sheets on uranium mining will be made available at the future meetings. Mr. Betz also mentioned that at the meeting he was asked for a copy of the Carrizo-Wilcox study. He offered that it was available on the internet, but then discovered that internet service can be very poor in some of the more rural counties, even for those serving in county government. This indicates that it is still important to have hardcopy of important documents available and maintain a means of distribution. A particular example is the *Joint Groundwater Monitoring and Contamination Report*. This year there were no hard copies sent to county judges, only an electronic notice that it was available online, but some county judges may not be able to access it online.

Dr. Scanlon reiterated that the writing of the white papers would need to be divided up, as mentioned earlier, and that she would be contacting the various previously identified collaborators.

Ms. Bilbe announced that the Nonpoint Source Team at TCEQ would be releasing their Request for Grant Application (RFGA) in June. Dr. Scanlon asked if it would be based on the 2008 303(d) list of impaired waters or is the new 303(d) list available. Ms. Bilbe responded the 2010 303(d) list is out as draft and available online. Ms Long cautioned everyone that since the document is still in draft form, some of the water bodies listed may still be dropped from the list and until the 2010 list is finalized the 2008 list should be used. Ms. Bilbe volunteered to send an email to everyone giving the web page where the 303(d) lists and National Water Quality Inventory Report to Congress (305(b) report) can be located.

Near the end of the meeting Mr. Betz recounted some of the discussions at a meeting of the House Natural Resources Committee, which he had attended the previous evening. The meeting extended into the early hours of the morning. The main topic of discussion was whether or not it would be a good idea to transport water from Uvalde to the San Antonio area. Currently there is a law, the Edwards Aquifer Authority (EAA) Act, which prohibits the building of a pipeline for transporting water to the area. Even though the Edwards Aquifer is probably the most studied aquifer in the state, the participants at the meeting concluded that there was not enough developed science to conclude whether the building of a pipeline would be beneficial. Mr. Betz also commented on a presentation at the meeting by a Mr. Ron Greene of Southwest Research Institute (SwRI) which he felt was probably too technical for the members of the House Natural Resources Committee to fully understand, since none of them are Geologists or Engineers. Mr. Betz suggested that we must take a special effort that any

research results, we recommend or for which we contract, be presented in an understandable way to the average person. He felt that the Carrizo-Wilcox Report had come close to this ideal, but even it could have been better.

The list of five research topics for which the Groundwater Research Subcommittee will pursue the drafting of white papers is as follows.

- 1. The characterization of groundwater - surface water interactions in the state with respect to water quantity and quality**
- 2. Aquifer Storage and Recovery (ASR) Programs in Texas**
- 3. Quantification of the vulnerability of dynamic aquifer systems, such as karst and alluvial aquifers, to contamination focusing particularly on pathogens**
- 4. Evaluation of groundwater treatment methodologies for effectiveness and economics in relationship to removal of contaminants**
- 5. Health aspects of lignite deposits associated with groundwater**

## **Adjournment**

The meeting adjourned at 9:59 AM.

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Minutes prepared by Joseph L. Peters, June 3, 2011

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