

**Texas AgriLife Research
Texas Water Resources Institute**

**Preventing Water Quality Contamination Through the Texas Well Owner Network
FY 10 CWA 319(h)
TSSWCB Project No. 10-04, FAMIS Account #07-428570**

Quarter no. 7 From 04-1-12 through 06-30-12

I. Abstract

Three well screenings were held during this quarter, and selection of targeted counties for TWON program delivery continued. Since April 2011, 23 screenings have been held with more than 1,300 samples screened. The TWON Handbook is in its final stages before being published and is expected to be published by the end of July. TWON workshops are beginning to be prepared and scheduled.

II. Overall Progress and Results by Task

TASK 1: Project Administration

Subtask 1.1: *TWRI will prepare electronic quarterly progress reports (QPRs) for submission to the TSSWCB. QPRs shall document all activities performed within a quarter and shall be submitted by the 15th of January, April, July and October. QPRs shall be distributed to all project partners.*

The following actions have been completed during this reporting period:

- a. TWRI submitted the 6th Quarter, Year 2 report to TSSWCB on April 15, 2012.

55% Complete

Subtask 1.2: *TWRI will perform accounting functions for project funds and will submit appropriate Reimbursement Forms to TSSWCB at least quarterly.*

The following actions have been completed during this reporting period:

- a. As of June 4, 2012, \$127,135.54 or 27% of federal project funds had been expended.

27% Complete

Subtask 1.3: *TWRI will host coordination meetings, conference calls, or TTVN meetings, as appropriate, with project partners in order to efficiently and effectively achieve project goals, coordinate efforts and summarize activities and achievements made throughout the course of this project. TWRI will develop lists of action items needed following each project coordination meeting and distribute to project personnel.*

The following actions have been completed during this reporting period:

- a. The new TWRI project manager met with the TSSWCB project manager on April 25, 2012, to catch up to speed on the project status.
- b. A meeting between TWRI, TSSWCB and the project partners was held on June 19, 2012, to discuss project deliverables and status. Meeting notes are included in Appendix A.

58% Complete

Subtask 1.4: *TWRI and SCSC will attend and participate in the Texas Groundwater Protection Committee and subcommittee meetings, Texas Alliance of Groundwater Districts conferences, and other meetings as appropriate in order to communicate project goals, activities and achievements accomplishments to affected parties.*

The following actions have been completed during this reporting period:

- a. The TWON Coordinator highlighted wells and the TWON project at the 2012 Land and Sea Grant National Water Conference (May 22), “Emerging Issues and Current Events in the World of Private Wells.” This conference session highlighted the private water well outreach education approach taken by Extension in Rhode Island, Virginia, Mississippi, Arizona, Wyoming, and Texas.
- b. The TWON Coordinator presented an introduction to TWON at the National Groundwater Association Summit (May 7), in Garden Grove, California.
- c. The TWON Coordinator presented at the Texas Alliance and Groundwater Districts, Red River Groundwater Conservation meeting (June 7) in Grayson County for 71 participants and in Fannin County (June 25) for 27 participants. The Red River Groundwater Conservation district has provided partial funding for travel.
- d. The TWON Coordinator presented the TWON program with a focus on drought impact to water supply wells at the Master Naturalists meeting in LaGrange on Saturday, May 19. The costs associated with this presentation were covered by the Master Naturalists.
- e. Extension Water Resources Specialist co-chaired the Texas Groundwater Protection Committee Public Outreach and Education (TGPC POE) Subcommittee quarterly meeting June 12 and provided status reports regarding TWON screenings, and publications and workshop development and scheduling.
- f. Extension Water Resources Specialist reviewed the TWON portion of the TGPC annual legislative report.

58% Complete

Subtask 1.5: *TWRI in collaboration with SCSC, will create (Months 1-3), host and maintain (Months 4-36) a website to serve as a clearinghouse for TWON information and resources including updated and renamed, web-adapted Tex*A*Syst educational materials and online delivery of TWON.*

The following actions have been completed during this reporting period:

- a. The Texas Well Owner Network website went online on June 10, 2011, and continues to be maintained and updated. It can be found at <http://twon.tamu.edu/>. Since the website went online, it has been viewed by a total of 1,752 unique visitors with 467 of those in the last quarter.
- b. The final *Facts about Fracking and Your Drinking Water Well*, *Private Drinking Water Well Basics*, and *Well Owner Drought Response* publications were uploaded to the website.
- c. The TWON website is being reorganized. In addition, when someone signs into the website, they are added to the mailing list. An FAQ section is also being added to address frequently asked questions by the public such as: Why does my well water stink?

58% Complete

Subtask 1.6: *TWRI and SCSC will develop a project final report.*

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

TASK 2: Development of TWON Educational Materials/Curriculum

Subtask 2.1: *SCSC will employ a TWON Coordinator to develop and deliver the TWON curriculum in selected watersheds.*

The following actions have been completed during this reporting period:

- a. This task is complete. Kristine Uhlman was hired on May 9, 2011.

100% Complete

Subtask 2.2: *Update and rename existing TEX*A*Syst documents to reflect changes/improvements in laws and regulations and private well management, maintenance and protection. Revisions will be developed by the TWON Coordinator, with significant assistance from Project Co-Leads and the BAEN Program Specialist. Existing publications include:*

- *Improving Wellhead Management and Conditions*
- *Improving Pesticide Storage and Handling*
- *Improving Fertilizer Storage and Handling*
- *Improving Petroleum Product Storage*
- *Improving Hazardous Waste Management*
- *Improving Household Wastewater Treatment*
- *Improving Livestock Manure Storage and Treatment Facilities*
- *Improving Livestock Holding Pen Management*

All documents, educational materials, etc. will be provided to the TSSWCB for review and comment prior to dissemination.

The following actions have been completed during this reporting period:

- a. The TWON Coordinator and Extension Water Resources Specialist met with Ag Communications on June 20, 2012, to discuss the number of pages for the TWON factsheets listed above and moving to an updated format for the factsheets so that they match the TWON Handbook. Some language will be the same if it is still accurate; other information will be changed/updated and references to TEX*A*Syst will be updated.
- b. The TWON Coordinator has generated DRAFT texts of the TWON factsheets listed in Subtask 2.2 and the factsheets are in various stages of review by project Co-PIs.

65% Complete

Subtask 2.3: *Develop and adapt additional educational resources to create a TWON curriculum. Resources will be developed by the TWON Coordinator, with significant assistance from Project Co-Leads and the BAEN Program Specialist. Specific components or modules of the curriculum may include:*

- *Watershed and groundwater hydrology and the importance to neighbors and the public of safeguarding aquifer integrity and groundwater quality*
- *Proper siting of drinking water wells and avoiding improper well construction techniques*
- *Proper maintenance and protection of the wellhead*
- *Solid and hazardous household waste management*
- *Aging and failure of well construction materials*
- *Locating and properly plugging abandoned wells*
- *Improperly sited and functioning on-site wastewater treatment systems*
- *Maintenance, aging and failure of on-site wastewater treatment systems*
- *Effects of land use changes on well water quality*
- *Successful methods of sharing TWON information with neighbors and community.*

TWON curriculum will include a handbook for participants, standardized presentations for program delivery and availability of program materials online.

All documents, educational materials, etc. will be provided to the TSSWCB for review and comment prior to dissemination.

The following actions have been completed during this reporting period:

- a. The TWON Handbook is expected back from Ag Communications by July 13. The TWON Coordinator and Extension Water Resource Specialist will cross-check the Handbook and then will resume re-scheduling and scheduling workshops. The Handbook should be published the end of July. The workshop for August 20th (Ft. Stockton) has been tentatively rescheduled for the week of September 4 (after Labor Day) due to concern about the availability of the TWON handbook.

65% Complete

TASK 3: Deliver updated and renamed TEX*A*Syst Publications, Well Water Screenings, and TWON trainings

Subtask 3.1: SCSC will develop a preliminary list of watersheds where the Well Water Screenings and TWON trainings will be delivered. SCSC will work with the TSSWCB and other state and local organizations to select locations for these training events. SCSC will coordinate efforts with state agencies and organizations already involved in WPP/TMDL processes or who are planning future WPP/TMDL processes in specific watersheds.

The following actions have been completed during this reporting period:

- a. The TWON schedule continues to be updated to reflect requests from local communities as well as from the TSSWCB.

65% Complete

Subtask 3.2: SCSC with assistance from TWRI will develop and disseminate informational materials in order to actively market well water screenings and TWON trainings including news releases, internet postings, newsletter announcements, public/conference presentations, flyers, etc. As appropriate TWRI will include information on the project in the txH₂O, New Waves e-letter, and AgriLife news. All announcements, letters, and publications will be provided to the TSSWCB for review and comment prior to dissemination.

The following actions have been completed during this reporting period:

- a. TSSWCB-approved press releases were sent out promoting well screenings to local areas.
- b. Two additional press releases were sent to TSSWCB for review on May 1, 2012 and May 9, 2012.

58% Complete

Subtask 3.3: Deliver 6-hour TWON trainings in selected watersheds, with the minimum goal being 6 trainings in year 2, and 8 trainings in year 3 to increase local understanding of the factors which can adversely impact well water quality and provide access to the knowledge and tools which can be employed to prevent and/or resolve them. Trainings will be delivered by the TWON Coordinator, and a combination of the BAEN and SCSC Program Specialists and the SCSC Assistant Professor and Extension Specialist.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 3.4: *Deliver well screening events to provide well-head protection information and recommendations for remediating well contamination, if appropriate. Screenings will be delivered by the SCSC Assistant Professor and Extension Specialist, TWON Coordinator and/or the SCSC Program Specialist as appropriate. A minimum of 30 well screening events will be delivered throughout the course of the project. Well screening event educational programming will include an overview of the topics discussed in more detail during comprehensive TWON trainings. Well screening events will be conducted in conjunction with TWON trainings as well as other Texas AgriLife Extension programs.*

The following actions have been completed during this reporting period:

- a. A total of 23 of the 30 required well screenings have been held.
- b. Well screenings were held in;
 - i. Hays County, April 19 & 17
 - ii. Sterling County, May 14 & 15
 - iii. Concho County, May 16 & 17
 - iv. McCulloch County, June 6 & 7

77% Complete

TASK 4: Evaluate the effectiveness of the TWON trainings

Subtask 4.1: *SCSC will develop and deliver pre-test/post-test evaluation strategy to evaluate increased knowledge by individuals participating in the TWON trainings regarding program principles, appropriate BMPs, and other activities; to address proper private well management, to evaluate participant satisfaction with the program; and to evaluate participant's intentions to change their behavior as a result of the TWON training.*

The following actions have been completed during this reporting period:

- a. Survey development continues. Example surveys from other similar programs are being assessed, working towards incorporating into TWON.
- b. Draft surveys were reviewed in the quarterly meeting. It was decided to test for gained knowledge and use the same questionnaire for pre- vs. post-test. A few conference evaluation questions will also be included within the tests.

40% Complete

Subtask 4.2: *SCSC will develop and deliver 6 month follow-up survey via online techniques to assess behavior changes adopted and other activities (such as number of neighbors contacted) by TWON training participants.*

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

30% Complete

Subtask 4.3: *SCSC will analyze results obtained from the pre-test/post-test and 6 month follow-up evaluations using descriptive, correlational, and analysis of variances statistical procedures.*

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 4.4: *SCSC will modify educational program and materials as appropriate.*

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

III. Related Issues/Current Problems and Favorable or Unusual Developments

- TWON program leaders are undergoing IRB certification to assure data collection and management activities comply with privacy standards.
- The TWON Coordinator has been named Chair of the National/International Groundwater Summit with Co-Chair Robert Mace, Deputy Executive Administrator Water Science and Conservation Division, Texas Water Development Board. The summit will be held April 28–May 2, 2013 in San Antonio.

IV. Projected Work for Next Quarter

- Three well screenings have been scheduled for next quarter.
- The TWON Handbook will be published.
- TWON trainings will be scheduled.
- TWRI will schedule quarterly meeting with program leaders and TSSWCB.
- The TWON Coordinator will present short introductions to the TWON Program for the Groundwater Conservation Districts in Collin, Denton and Cooke Counties and for the Watershed Coordinators Roundtable to be held in College Station on July 26.
- The first 6-hour workshop will be scheduled for the week of September 4.

APPENDIX A

QUARTERLY COORDINATION MEETING — NOTES *Preventing Water Quality Contamination Through the Texas Well Owners Network* June 19, 2012 @ 10:00 am

Attendees – Diane Boellstorff, Ryan Gerlich, Danielle Kalisek, Jana Lloyd, John Smith, Kristine Uhlman

Goals

- Discuss current project activities, project schedule, communication needs, deliverables and any other issues

Specific discussion points

TWON Handbook & Training status

- Should get it back from Ag Comm any day now; Kristine will cross-check, then schedule workshops
- Need handbook in-hand before the trainings; should be published by the end of July.
- The first training workshop is going to be scheduled for the week of August 20
- More trainings to be scheduled late September to October

TWON Curriculum status

- Fact Sheets (formerly Tex*A*Syst) – Meeting with Ag Comm on June 20 to discuss the number of pages and moving to an updated format
 - Household Wastewater Treatment – In draft by Brent & Ryan; updating and editing to Co-PIs, TSSWCB, AgComm
 - Updates will be made to code information to bring it up-to-date.
 - Changing name and titles to correspond with the manual
 - Improving Livestock Manure Storage and Treatment Facilities and improving Livestock Holding Pen Management are going to be combined. It was suggested to contact Saqib (livestock expert)
 - Fact sheets can be filtered into the trainings as they are updated and ready, but they are not needed to get the trainings started

Update on water well screenings

- A total of 23 out of 30 required water well screenings have been held. Four this quarter.
- These screenings are well-received and have a good turnout
- In areas with Groundwater Conservation Districts with well water screening availability, the screenings sometimes don't attract participation in the same way because well owners have access to a similar program—something to consider in the future
- Screenings promote interaction with the GWCD staff and train citizens to have their well water tested annually at the minimum for total coliform/fecal coliform/*E. coli*.
- TSSWCB project manager suggests building a separate list of suggested watersheds for if there is a second project... Then we can start right away because we won't need new materials

Any topics for an article or brief (Conservation Matters, txH2O, etc.)?

Upcoming presentations and workshops

- Connections with GWCD – Alliance of Groundwater Summit – end of August in Austin

Program evaluation / participant survey approach

- Will need IRB
- What information is needed to determine impact; meet again with Paul Pope, evaluation specialist
- Questionnaire on knowledge gained (Galen Roberts of TWS) – for watershed coordinators in addition to participants
- Jana – connect Kristine and Galen on the above
- Sign-in list of stakeholders and share with CEAs, watershed coordinators, etc.
- Kristine shared draft evaluation of the program
- Pre/Post – Test for gained knowledge; same questionnaire for pre- vs. post-test
- One document for pre-/post-test plus conference evaluation; will bring for comment to next meeting
- On the screening evaluation form, a question asks participants to estimate the economic value of their attending the screening.

- Find out what questions can be used/not; use data
- Match pre/post by using last 4 digits of cell phone number
- Decided to use Likert style – computer read, reports can be appendix to QPR
- EPA is just given the numbers – need knowledge increase, BMPs implemented
- Other information – evaluation of workshop – we can focus on Extension needs but EPA does not necessarily need this information

Budget revisions

- Decided a budget revision is not needed at this time

Spending

- Spend equally throughout the project
- No-cost extension is NOT going to happen

Other

- Big part – PowerPoint
- Work on dates for modules – location-specific
- Once have standard module/presentation, then just tweak for the area. Following the same template, but looking at possible other formats (similar to TWS).
- Training Team: Kristine, Diane and Ryan/Brent

Determine Action Items

- Compile PowerPoint/modules
- Work on dates for modules
- Schedule workshops
- Kristine will connect with Galen on questionnaire on knowledge gained for watershed coordinators in addition to participants
- Bring compiled pre-/post-test plus conference evaluation document to next quarterly meeting for comment
- Plan to submit a new proposal in the Fall – continuation once we have workshop results, in addition to the screening results, including outreach, bringing people in