Texas Groundwater Protection Committee

Record of Meeting
Second Quarter Meeting,
Fiscal Year 1998

Meeting Date: February 19, 1998
Place: Building F, TNRCC, Park 35 Room: 2210
Meeting No.: 34

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MEETING

ATTENDANCE

Committee Members	**Affiliation**
Mary Ambrose	TNRCC
Phil Nordstrom	TWDB
Richard Ginn	RCT
Donnie Dippel	TDA
Beade Northcut	TSSWCB
Wayne Jordan	TAES
Robert Mace	BEG
Bill Couch	TAGD
John Jacobi	TDH

Speakers

Robert Mace	Bureau of Economic Geology of the University of Texas at Austin
Anne Miller	TNRCC, Petroleum Storage Tank Division

Agency Staff	**Affiliation**	**Program**
Steve Musick	TNRCC	Water Quality Division
Kelly Mills	TNRCC	Water Quality Division
Craig Caldwell	TNRCC	Water Quality Division
Scott Crouch	TNRCC	Pollution Cleanup Division
Alan Batcheller	TNRCC	Petroleum Storage Tank Division
Ronnie Eason	TNRCC	Petroleum Storage Tank Division
David Bratberg	TAES	Regulatory Services
Monte Dozier	TAEX	Temple
Ambose Charles	TDA	
Jeanette O'Hare	TDA	
Bob Ensor	USDA/NRCS	

Interested Parties	**Affiliation**

Rick Lowerre	Henry, Lowerre, Johnson, Hess & Frederick
Lynn Wright	Brown and Caldwell
Jim O'Connor	San Antonio Water System
David Johns	City of Austin
Ken Kramer	Sierra Club, Lone Star Chapter
Fred Aus	Senate Natural Resources Committee
Jennifer Modgling	House Natural Resources Committee
Allan Lange	Lipan-Kickapoo Underground Water Cons. District
Scott Holland	Irion County Water Conservation District

COMMITTEE HANDOUTS

1. Meeting Agenda
2. Landowners Guide to Plugging Abandoned Water Wells; Draft Instructors Copy
3. Copies; TGPC Letters to Agencies (re: Abandoned Well Closure Initiative)
4. January 27, 1998 TNRCC/EPA CSGWPP Conference Call Summary
5. TNRCC Rules Tracking Log
6. TNRCC Environmental Trade Fair Brochure

MEETING RECORD OF FEBRUARY 19, 1998

I. Call to Order and Introductions

Mary Ambrose, TNRCC, Designated Chairman of the TGPC, called the meeting to order at 1:33 p.m. Mr. Robert Mace sat in for Alan Dutton and the Bureau of Economic Geology. All member agencies were represented. A meeting agenda was provided as Handout #1.

II. Subcommittee Reports

Agricultural Chemicals Subcommittee

Steve Musick, TNRCC, Chairman of the subcommittee, presented the subcommittee's report. The subcommittee held its FY98 second quarter meeting at 10:00 a.m. on February 19, 1998. The subcommittee heard reports from the Site Selection and Education task forces. The Best Management Practices, State Management Plan (SMP), and Data Evaluation and Interpretation (DEI) task forces were not active in the last quarter.

The Site Selection task force (SSTF) reported that vulnerable area mapping, well location and depth data, and sand point driven well technology had been reviewed for monitoring recommendations to the subcommittee. The Education task force reported that a contribution on the SMP had been provided to a TAEX rules and regulations video project. Information compiled by the Education task force including slide graphics and text from presentation materials was compiled.
TNRCC staff updated the subcommittee on the investigation into atrazine contamination of one of the City of Friona's water wells. TNRCC staff presented additional background information on the contamination case and updated information on sampling and analytical activities. The

charge to the DEI task force was discussed. It was determined that more information was needed to finalize the charge. TNRCC staff also informed the subcommittee of atrazine detections in sampling at the City of Tulia water supply. TNRCC staff will keep the subcommittee apprised of ongoing monitoring and any new developments. There was some discussion of including Tulia in the SMP-related investigation.

The subcommittee discussed this year's atrazine monitoring efforts based on the report of the SSTF. Vulnerable area mapping was examined by the SSTF and the TWDB's Ground Water Data System was researched for shallow wells. Most wells in the identified areas were greater than 100 feet in depth and may not be good candidates for the monitoring program. There was some discussion of the validity of application or use data in the SPIM method used for vulnerability. The recommendation of the SSTF, to develop more site-specific information and a monitoring plan for Hidalgo and Bailey Counties, was accepted by the subcommittee.

It was announced that contact with EPA Region 6 (on the status of Region 6's answer to subcommittee's response to Region 6's Generic SMP comments), due by December, should be provided soon.

Ground-Water Data Management Subcommittee

Mr. Musick reported that the subcommittee had not met during the quarter.

Ground-Water Nonpoint Source Subcommittee

Beade Northcut, Chairman of the subcommittee, presented the subcommittee's report. Mr. Northcut noted the TSSWCB had conducted two water quality conferences. A conference was conducted in Wharton on January 16, 1998. The second conference was conducted in Weslaco on January 28, 1998. Mr. Northcut noted that 319 grant proposals were being drafted and noted the 1999 cycle should start within the month. He noted TSSWCB was working with the TDA on surface water proposals. Mr. Northcut was asked if the timing cycle was concurrent with TNRCC. He noted the cycles were concurrent; a combined package between the two agencies would be provided to EPA. Mr. Northcut noted that most of the TSSWCB proposals will support the TMDL process.

Water Well Closure Task Force

Monte Dozier, TAEX, Co-chairman of the task force, presented the report. Mr. Dozier provided Handout #2, the draft instructor's copy of the landowner plugging guidance document. He noted the task force co-chairs and Committee staff had met on January 22, 1998, to discuss the technical guidance, initial distribution and education efforts, and immediate actions. He noted a letter from the TGPC had been drafted for two TNRCC programs, TAEX, TSSWCB, TAGD, USDA/NRCS, and the Texas Department of Licensing and Regulation requesting the plugging document be provided to regional-level staff for review and comment and to solicit comments for the dissemination effort. Ms. Ambrose noted Handout #3, the final letters, which will go in the mail tomorrow.

Mr. Dozier noted he has initiated requests with these agencies to have the task force placed on regional-staff meeting agendas to discuss the initiative. He noted that the task force was going to meet again in mid-March, and he hoped the task force would be allowed to address TAEX in mid to late March and the TSSWCB in late March or early April. Mr. Dozier noted the task force is planning to draft and submit a 319 grant proposal for the development of education material, such as a video, for use at the local level. This will be a primary topic at the mid-March task force meeting.

III. Presentation

Robert Mace, BEG, Hydrocarbon Plumes from Leaking Petroleum Storage Tank Sites in Texas

Mr. Mace presented the BEG's findings from the study Extent, Mass, and Duration of Hydrocarbon Plumes from Leaking Underground Petroleum Storage Tank Sites in Texas (BEG Geological Circular 97-01, 1997). The study focused on groundwater impacts from leaking petroleum storage tanks (LPSTs). The study consisted of compiling and summarizing LPST site information and quantifying the size, mass, and duration of benzene plumes in order to determine plume dimensions, predictability of plume concentrations and lengths, rates at which plumes self-remediate, and classification of plume behavior to assist in exposure assessments.

Mr. Mace noted that the BEG had compiled site, soil, hydrogeologic, and chemical analytical information from TNRCC files for 605 LPST sites. The sites were located throughout the state. All of the information was entered into a database which contained more than half a million data entries. The data entered included chemical and water-level data on more than 4,000 monitoring wells. Using well location, water-level, and chemical data, the BEG determined hydraulic gradients, groundwater flow directions, average plume benzene concentrations, and benzene plume dimensions over time for different hydrogeologic and climatic regions of the state.

Mr. Mace noted that most of the benzene plumes which were studied were less than 350 to 400 feet long and averaged about 180 feet in length. The study found that the length of benzene plumes cannot be predicted on the basis of either hydrogeology or previous remediation activities. There was no statistical difference in benzene plume length between plumes in different hydrogeologic settings throughout the state. Karst aquifers like the Edwards are probable exceptions. Data from three sites indicated that plume length in the Edwards aquifer may be three times greater than in other hydrogeologic settings.

Mr. Mace noted that the study revealed that the mass and size of benzene plumes follows three to four predictable stages. Even without remediation, plume mass increases, stabilizes, and rapidly declines over time. Declines in plume mass and length result from natural attenuation processes or remediation activities. Biodegradation plays the most important role in natural attenuation while volatilization, sorption, and dispersion play lesser roles. Naturally occurring bacteria with an affinity for hydrocarbons serve to break hydrocarbons down. Most plumes the BEG analyzed had stabilized or were decreasing in length and concentration. Only 14 percent of plumes were increasing in concentration, and only 3 percent were increasing in length.

Mr. Mace noted that source abatement and plume remediation logically should shorten the time required to decrease plume length and concentration. The study noted that other factors, such as the amount of spilled and leaked fuel and natural attenuation processes, probably account for more differences in plume length than hydrogeology or previous remediation activities.

Risks associated with dissolved hydrocarbon plumes include threats to water wells; direct human contact with hydrocarbon, hydrocarbon vapors, or impacted soils; and explosive risks of hydrocarbon vapors. Almost 40 percent of the studied sites had benzene plumes that reportedly extend offsite and impact either high-quality groundwater or water that has a demonstrated beneficial use. Almost 60 percent of the studied sites had at least one public or domestic water-supply well within one half of a mile of the leak. Because of these exposure risks, characterization of LPST sites is required to determine the lateral extent and stage of the plume and to identify potential nearby receptors such as water wells. However, because plumes appear to attenuate naturally, active remediation such as pump and treat might be required only in special cases to prevent a plume from impacting nearby receptors or to reduce a plume that has already impacted a receptor.

Mr. Mace noted the following in conclusion: 1) the study suggests that natural attenuation plays a primary role in removing the hydrocarbons, 2) most (about 85 percent) of the studied plumes have stabilized or are decreasing in length and concentration, 3) plume length is not affected by remediation, 4) potential receptors must be protected from plumes, and 5) remediation is required where nearby receptors are threatened or impacted. When asked about the study's finding regarding the time required for reductions to occur, Mr. Mace noted that data on the timing, duration, and magnitude of leaks and biodegradation and other attenuation rates were generally unknown or not measured for the LPST sites. He noted that because these data are unknown, the study could not predict the timing at which the different stages might occur for benzene plumes in the corrective action process.

Anne Miller, TNRCC, Implications for the Petroleum Storage Tank Regulatory Program

Ms. Miller provided an overview of the implications of the BEG study on the Petroleum Storage Tank Regulatory Program. Following the publication of the BEG report, the PST corrective action program was revamped to account for the documented occurrence of natural attenuation. The PST program has used a risk-based corrective action approach since 1994; the approach uses risk assessment concepts to establish cleanup goals. Based upon the BEG study results, new risk-based criteria were developed to close off the evaluation of exposure pathways where contaminant levels are protective or where exposure is unlikely to occur due to site conditions. She noted that the new criteria allow the PST program to focus limited resources (re: staff and Petroleum Storage Tank Remediation funds) on high-risk sites where a receptor (i.e., a water well) has been impacted or where there is future potential exposure to the contaminants.

Ms. Miller noted the consistent program element before and after the BEG study is the requirement for a thorough site assessment to evaluate the site characteristics, to determine the maximum levels of contamination, to assess whether groundwater is contaminated, and to identify potential receptors. Receptors of concern include water wells, surface water bodies and subsurface utilities. She noted water-well surveys include identification of registered wells

within ««-mile radius through a records search and identification of registered/unregistered wells within a 500-ft radius through a walking or door-to-door survey.

Depending upon the groundwater usage and threatened receptors, plume delineation criteria are set. Plume delineation is achieved through the installation of monitoring wells and the subsequent groundwater sampling and analysis for the constituents of concern. If groundwater use is likely, the plume must be delineated to federal MCLs. Delineation is also required between the site and any threatened water wells or other receptors. Water wells which are considered potential receptors include: water wells completed in the impacted zone, water wells with no completion information, or water wells with incomplete documentation of the cemented interval. At low-risk sites where there are no threatened receptors, less groundwater plume delineation is required.

Ms. Miller noted the new criteria are protective of current groundwater use and future potential groundwater use. When the impacted zone at the site is part of a state-designated major or minor aquifer or if there is demonstrated local use of the impacted zone, evaluation of the groundwater ingestion pathway is generally required. In some instances, groundwater points of exposure are not set at the source areas, but at more reasonable points of exposure such as the property line, or at an appropriate offsite location. In these situations, fate and transport evaluations are conducted to determine source area cleanup goals. This is done by setting the health-based limits to be met at the exposure point and backcalculating to arrive at the cleanup goals for the source area. When available for the constituents of concern, federal MCLs serve as the health-based limits. The PST program now encourages the use of bioattenuation assumptions in groundwater models, but always monitors the actual site data to verify the modeling conclusions.

For low-risk sites where exposure to the impacted groundwater zone is unlikely or where the concentrations are protective, prior to site closure, the stability of the contaminant plume must be demonstrated through the groundwater sampling results and typically, through the collection of natural attenuation indicators (i.e., dissolved oxygen and other parameters). If the plume is expanding or concentrations are increasing, then the site is not ready for closure. However, most of the PST program's data reviews for historical releases appear to confirm the BEG study conclusions that plumes are stable or declining. Since the implementation of the new criteria, the PST program has closed over 1700 LPST sites.

For sites where corrective action is required, natural attenuation is considered a viable alternative and should be considered as a corrective action method, especially if there are no threatened or impacted receptors. For high-risk sites with threatened or impacted receptors, an engineered remediation system may be more appropriate. Since the implementation of the new criteria, the PST program has approved over 400 corrective action plans.

In summary, Ms. Miller noted the BEG study has allowed the PST program to close out low-risk sites and focus its resources on sites which are most likely to pose a risk to human health and safety and the environment. When asked about monitored constituents, Ms. Miller noted the PST program typically monitored for BTEX, TPH, and MTBE. When asked about monitoring for lead, Ms. Miller noted that lead is not generally monitored in association with gasoline releases; however, lead may be monitored from releases of oil/waste oil facilities or tanks. When asked

what EPA thought of the PST program's new criteria, Ms. Miller responded that EPA prefers the use of the term "monitored natural attenuation". Monitored natural attenuation is recognized by EPA as a viable method of remediation for soil and groundwater. However, it should be selected only where it meets all relevant remedy selection criteria. It should not be considered as a default option.

IV. Business

Set Future Meeting Dates

After discussion, the Committee set the FY98 Third Quarter meeting for Thursday, May 21, 1998, at 1:00 p.m.

V. Information

Exchange for Ground Water Related Activities/Status Update

Committee Publications

Joint Groundwater Monitoring and Contamination Report

Craig Caldwell, TNRCC, provided a status update on the preparation of the joint report. Mr. Caldwell noted that materials were distributed to agencies and program areas on December 18, 1997. Submittal of information was requested by February 1, 1998. He noted most of the information had been submitted. Mr. Caldwell noted the report's statutory due date of April 1. He noted an initial draft should begin the review process around March 1, 1998, and the final draft should enter the TNRCC publication process on April 1, 1998.

Legislative Report

Ms. Ambrose noted that the legislative report will be an item of discussion at the next TGPC meeting and the members should be considering staff to serve on the report's subcommittee. When asked, Kelly Mills, TNRCC, noted that the efforts to produce the last report were begun in July, prior to the 75th session.

Texas Comprehensive State Ground Water Protection Program--Process Update

Mr. Musick provided Handout #4, a summary from a January 27, 1998, TNRCC-EPA Region 6 conference call. He then summarized the EPA endorsement process as provided by Region 6 EPA staff. He noted public comments on the document, following Texas Register publication and possibly a public hearing, would precede a formal submittal. Following formal submittal, Region 6 Ground Water staff will perform an administrative review of the document. The document will then proceed for technical review by the Region 6 Coordinating Advisory Board. Region 6 will then provide comments and the TGPC will respond. The comments (document revisions) will be negotiated between the TGPC and Region 6. The revised document will then be reviewed by the Region 6 Ground Water Steering Committee (composed of the Region 6

Division Directors). Following this review and any revisions, the document will be endorsed by the Regional Administrator. EPA Headquarters is not involved in the review process unless the Region requests their participation.

Mr. Musick noted the importance of public comments prior to the formal submittal of the document, stressing a 60-day comment period following Texas Register publication. He noted the TGPC, primarily TNRCC staff and any volunteers from the other agencies, would develop the draft core assessment document for the TGPCC's review. This will be followed by Region 6's preliminary review and the subsequent negotiations between the TGPC and Region 6.

Mr. Musick noted the following issues related to the CSGWPP process, as discussed with Region 6 on the conference call. He noted that TNRCC staff discussed the possibility of a Region 6 preliminary review prior to the TGPC's public review process. Region 6 staff was amenable to a preliminary review by the Region 6 Ground Water staff only. TNRCC staff asked about EPA Headquarters process simplification efforts. Region 6 staff noted that they would follow up on the issue. TNRCC staff inquired about the necessary documentation required. Region 6 staff indicated that a reasonable amount of documentation would be required. For example, only citations of and copies of directly pertinent section references of rule or law are needed, documentation of program delegations are not required. TNRCC staff asked about problematic areas in the process that other Region 6 states had encountered. Region 6 staff identified the Priority Setting Strategic Activity as an area of concern with other Region 6 states' (re: Oklahoma) endorsement efforts. TNRCC staff requested guidance on the vision statement. Region 6 staff indicated that other states' visions were generally simple goal statements for guiding continued CSGWPP development.

Priority Groundwater Management Area Status Update

Mr. Mills provided a status update of the two priority groundwater management area (PGMA) studies which are underway. He noted the North Texas Alluvium and Paleozoic Outcrop PGMA study, covering a 26-county area in north Texas, was initiated with the TNRCC requesting studies from the TWDB and Texas Parks and Wildlife Department (TPWD) on October 6, 1997. A stakeholder notice soliciting comments had previously been sent on September 19, 1997. Two comments were received during the comment period. The TWDB and TPWD studies are due on April 6, 1998, and the TNRCC report is due on June 8, 1998. The TNRCC has established a regional advisory committee to assist in compiling the TNRCC report and recommendations. The advisory committee will conduct an organizational meeting within the next few weeks, will meet in April to discuss the TWDB and TPWD studies, and will meet in May to discuss the draft TNRCC report. Advisory committees are not required by statute; however, the TNRCC has found (from past studies) that they are beneficial to the process.

The El Paso County PGMA study was initiated with the TNRCC requesting studies from the TWDB and TPWD on January 29, 1998. A stakeholder notice soliciting comments had previously been sent on January 9, 1998. One comment was received during the comment period. Mr. Musick noted that an update to the original TWDB study was requested; study time frames will be abbreviated to meet the statutory deadline of September 1, 1998.

In addition, Mr. Mills noted that TAEX had conducted two meetings to address the required educational component in PGMAs. Meetings were conducted on January 8 and February 17, 1998. Staff from TAEX, TNRCC, TWDB, TPWD, and the Texas Alliance of Groundwater Districts (TAGD) had participated in the meetings. When asked, Mr. Mills noted that Lee Arrington, South Plains Underground Water Conservation District, had represented TAGD. When asked about the February 26, 1998, House/Senate Natural Resource Committee meeting in El Paso, Mr. Mills noted that the TNRCC will be prepared to discuss the actions which have been taken to date to implement Senate Bill 1 and to provide a summary of the comments which have been received.

Risk Reduction Rules Update

Scott Crouch, TNRCC, provided an update on the status of the TNRCC's risk reduction rules. Mr. Crouch noted that the draft rules have been completed and that staff was attempting to get the rules on the Commission's March 18 or April 8, 1998, agenda. A 60-day comment period will follow publication in the Texas Register. The final rule should be adopted in the September-October time frame. Mr. Crouch was asked if there were any major changes (as the proposed rule appeared in the concept documents). Mr. Crouch noted that most of the changes were minor and served only to "tighten up" the rule as outlined in the concept documents.

VI. Announcements

Ms. Ambrose provided Handout #5 (TNRCC Rules Tracking Log). Ms. Ambrose highlighted the risk reduction rules Mr. Crouch discussed. She noted the memorandum-of-understanding between the TNRCC and the RCT should be adopted at the April 8, 1998, Commission agenda; the Edwards aquifer phase II proposed rules are on the Commission's March 4, 1998, agenda; and the concentrated animal feeding operations (CAFO) rules were proposed for comments at yesterday's Commission agenda.

Ms. Ambrose noted Handout #6, and noted the TNRCC's Environmental Trade Fair is to be conducted in Austin from April 4 - 6, 1998. Registration information is included in the handout.

Ms. Ambrose announced that the Ground Water Protection Council is meeting in Annapolis from March 22 - 25, 1998; the Rio Grande Valley Nonpoint Source meeting in Brownsville from March 11 - 13, 1998; and the National Water Research Institute's Source Water Technical Conference in Dallas from April 28 - 30, 1998.

Phil Nordstrom, TWDB, noted that Bill Mullican, Director of the Water Resource Planning Division at the TWDB, had requested to to address the Committee at its next meeting. Mr. Mullican will present an overview of regional water planning activity under Senate Bill 1.

Wayne Jordan, TAES, announced that the TAES was in the early-planning stage for conducting a comprehensive water meeting in Austin in the mid-November to early December time frame. This is a coordinated effort between the Texas Water Resource Institute and the Texas Agricultural Extension Service. He noted that several of the members may be contacted in the next couple of weeks to participate on a steering committee to assist in establishing the scope of

the planned meeting.

Donnie Dippel, TDA, reported on the Surface Water Protection Committee meeting conducted in Temple yesterday. The meeting was attended by TSSWCB, TAEX, USDA/NRCS, USDA Agricultural Research Service, TAES, TNRCC, the Governor's office, and representatives of commodity groups and producers. The meeting discussed atrazine detections in surface water in the state. He noted that Bob Bitner presented an atrazine action plan which was well received. He noted a steering group in Hill County is being established under the lead of the TSSWCB. The steering committee will coordinate with federal and state agencies and will work through the local community. The initiative is to make the community aware of its water quality problems and assist the community develop local solutions.

Richard Ginn, RCT, noted the memorandum-of-understanding between the TNRCC and the RCT as mentioned by Ms. Ambrose. He noted the MOU covers gray areas of agency jurisdiction and clarifies procedures. He noted there would be a timed adoption between the two Commissions.

VII. Public Comment

Ms. Ambrose asked the audience for public comments; there were none.

VIII. Adjourn

There being no other business or discussion, Ms. Ambrose adjourned the meeting at 2:50 p.m.

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Prepared by: Steve Musick